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A SCHOOL OF THE OLDEN TIME.

THE

American Educational Monthly

A MAGAZINE OF

POPULAR INSTRUCTION & LITERATURE.

181942 —

VOLUME X.—1873.



NEW YORK:

J. W. Schermerhorn & Co.

1873.



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AMERICAN EDUCATIONAL MONTHLY.



JANUARY, 1873.

A SCHOOL OF THE OLDEN TIME.

OUR artist has made a capital picture of it, despite a little anachronism in some of the details. The date most appropriate for such a scene would be not later than 1800, but the style of the furniture, the atlas on the floor, the little library suspended against the walls, the map of one of the hemispheres at the rear, and the drapery of the windows, indicate a period as late as 1825 or 1830. We choose however to regard it, as it was intended, for a representation of a school of the earlier period of our national history, and to make it the text whereon to hang some reminiscences of the schools of fifty or seventy-five years ago. But, first, let us look at the picture itself. The principal interest seems to concentrate in the boy in his shirt-sleeves in the centre, who is sketching on his slate a picture, which it would be no sin to worship—since it is not in the likeness of anything in heaven, earth, or sea—but which by a large charity we may suppose to be intended for a caricature of the master. The unskillful artist is so absorbed in his work, and so pleased with the admiring regards of his school-mates, that he does not take the hint offered by the extended foot of the apparently studious boy at the front of the table, that the master is overlooking his work. And that master! what a perfect

illustration of the pedagogue of those times: middle aged, with spectacles low down on his nose, clad in the style of the latter part of the last century, with shoes and knee-breeches, hardly so stern of mien as most of his professional brethren, yet expressing in his face the nervous impatience with which he waits the proper moment to draw from under his left arm the whip already seized with a firm grip, and let it descend with terrific force upon the shoulders of the offender. Meantime the other scholars, boys and girls alike, are taking advantage of the teacher's preoccupation, to plan and carry out their schemes of mischief. One roguish urchin is kicking over, very slyly, the atlas and books, which the young artist had laid at the foot of his chair, and the girls at the rear end of the room are having a good time, whispering.

The artist has endeavored to portray the humorous aspect of the school of 1800, or thereabouts; but there were other aspects of these schools, humorous, grotesque, and painful, which are beyond the power of the most skillful artist to delineate. From the ample material in our possession, the reminiscences of their school days by men who have passed off the stage, or who linger at an advanced age, let us try to give some idea of the schools and schoolmasters of the period from 1780 to 1820. What the school-houses were, we have already shown in a former article.

The teachers of that period in New England were, many of them, well versed in the studies of that time, which did not constitute a very extended course. Arithmetic was only taught at farthest to the Rule of Three, and, prior to 1800, there was seldom a text-book on that subject in the school; the teacher had written out his rules and examples in a manuscript volume, which was the most conclusive testimonial of his ability to teach; reading and spelling were taught, the latter with considerable thoroughness (I am afraid we have not improved much on that at the present day); geography was rarely one of the school studies—never in the district or public schools before 1800—and when instruction was given in it, it was in some very brief compendium like Dwight's Geography, or Morse's first Book, without maps or illustrations. Very few of the children

studied grammar, even so far as to distinguish the parts of speech—indeed, few of the teachers understood it sufficiently to teach it. Parsing was one of those occult mysteries, which common minds could not hope to understand: and the man (women never attempted it in those days) who could parse a difficult sentence, was looked up to, as a prodigy of learning. Penmanship—the old-fashioned round hand, both in coarse and fine hand—was taught and tolerably well. The teacher wrote all the copies and made and mended all the pens. Those were the days of the grey goose-quill. There was no apparatus to aid in instruction, nothing to occupy the attention of the children when not reciting or learning their lessons, nothing in the furniture of the school room, or in their very dry and pictureless textbooks to awaken thought or interest the mind of the child. Nay, I am too fast there. The New England Primer with its blurred and doleful pictures, including that of the martyrdom of Mr. John Rogers in the presence of his numerous family, was in the hands of the children, and unending were the speculations whether his devoted wife brought nine or ten children to witness his sad taking off. There was, too, after about 1800, Noah Webster's American Spelling Book, with its illustrated fables "Of the Boy that stole apples," "The Country Maid and her Milk Pail," "The Cat and the Rat," etc., etc., and the poor children, what time they were not suffering from intense cold or intense heat, in the close, ill-ventilated school room, "saying their lessons" or undergoing the torture of the terrible punishments of those days, were laudably occupied in investigating these wonderful pictures, alternating their labors meanwhile by carving the board which served for a writing-desk, into pin-boxes, fly-traps and rude channel ways down which the ink ran in miniature rivulets.

But the most remarkable part of the school exercises was the punishments. In this department of their profession, most of the teachers were adepts, however deficient they might be in book-learning. Some of them were ferocious brutes, and showed an ingenuity and skill in punishing the poor children which would have made Torquemada welcome them as thoroughly qualified to administer the tortures of the Inqui-

sition or to devise new ones. There were three Lovells, the father, son, and grandson, who were successively teachers in Boston from about 1760 to 1820. The elder Lovell, John, and his son James, were very cruel and tyrannical. The venerable Dr. Cooper, a celebrated minister of Boston about the Revolutionary period, was one of John Lovell's pupils, and he told a friend, a short time before his death, that all through his life he had dreams of the school and of the tortures he endured there. Lovell's favorite mode of punishing was what he called trouncing; this was performed by stripping the boy, mounting him on another boy's back and whipping him very severely with birch rods in the presence of the whole school. At one time he flogged his own grandson so cruelly in this way that his son, the boy's father, who was his assistant in the school, rose and said, "Sir, you have flogged that boy enough." The boys in his school were so much afraid of Master Lovell, that they could not study. Proctor, another Boston teacher of the same period, was equally cruel in his discipline. In New York and Philadelphia the same severity prevailed. The teachers in both cities, as well as those in the villages and towns adjacent, were all from England or Ireland, and carried out the same rigorous discipline from which they had themselves suffered at home. The late Elkanah Watson, in his annals of Philadelphia and Pennsylvania, gives a notable illustration of this severity, as exercised by one John Todd, the master in the Friends' Academy in Fourth St., Philadelphia, about 1790.

"The State House clock, being at the time visible from the school pavement, gave to the eye full notice when to break off marble and plug top, hastily collect the 'stakes,' and bundle in, pell-mell, to the school room, where, until the arrival of the 'master of scholars,' John Todd, they were busily employed, every one in finding his place, under the control for the time of a short Irishman usher, named Jimmy M'Cue. On the entrance of the master, all shuffling of the feet, 'scrouging,' hitting of elbows, and whispering disputes, were hastily adjusted, leaving a silence which might be felt, 'not a mouse stirring.' He, Todd, dressed after the plainest manner of Friends, but of the richest material, with looped cocked hat, was at all times remarkably clean and nice in his person, a man of about sixty years, square built, and well sustained by bone and muscle.

"After an hour, maybe, of quiet time, every thing going smoothly on—no sound, but from the master's voice, while hearing the one

standing near him, a dead calm, when suddenly a brisk slap on the ear or face, for something or for nothing, gave 'dreadful note' that an eruption of the lava was now about to take place. Next thing to be seen was 'strap in full play' over the head and shoulders of Pilgarlic.' The passion of the master 'growing by what it fed on,' and wanting elbow room, the chair would be quickly thrust on one side, when, with sudden gripe, he was to be seen dragging his struggling suppliant to the flogging ground, in the centre of the room: having placed his left foot upon the end of a bench, he then, with a patent jerk, peculiar to himself, would have the boy completely horsed across his knee, with his left elbow on the back of his neck, to keep him securely on. In the hurry of the moment he would bring his long pen with him, griped between his strong teeth (visible the while), causing both ends to descend to a parallel with his chin, and adding much to the terror of the scene. His face would assume a deep claret color—his little bob of hair would disengage itself, and stand out, each 'particular hair' as it were, 'up in arms and eager for the fray.' Having his victim thus completely at command, and all useless drapery drawn up to a bunch above the waistband, and the rotundity and the nankeen in the closest affinity possible for them to be, then once more to the 'staring crew' would be exhibited the dexterity of master and strap. By long practice he had arrived at such perfection in the exercise, that, moving in quick time, the fifteen inches of bridle rein (*alias* strap) would be seen after every cut, elevated to a perpendicular above his head; from whence it descended like a flail on the stretched nankeen, leaving 'on the place beneath' a fiery red streak, at every slash. It was customary with him to address the sufferer at intervals, as follows: 'Does it hurt?' 'Oh! yes, master; oh! don't, master.' 'Then I'll make it hurt thee more. I'll make thy flesh creep—thou shan't want a warming pan to-night. Intolerable being! Nothing in nature is able to prevail upon thee but my strap.' He had one boy named George Fudge, who usually wore leather breeches, with which he put strap and its master at defiance. He would never acknowledge pain—he would not 'sing out.' Todd seized him one day, and having gone through the evolutions of strapping (as useless, in effect, as if he had been thrashing a flour-bag), almost breathless with rage, he once more appealed to the feelings of the 'reprobate,' by saying: 'Does it not hurt?' The astonishment of the school and the master was completed, on hearing him sing out, 'No! Hurray for leather crackers!' He was thrown off immediately, sprawling on the floor, with the benediction as follows: 'Intolerable being! Get out of my school. Nothing in nature is able to prevail upon thee—not even my strap!'"

Mr. Watson says, on the authority of a venerable Philadelphian, that in 1780, or thereabouts, when boys and girls went to school together, it was the common practice to

make the boys strip off their jackets and loose their trowsers' band preparatory to hoisting them upon another boy's back, so that the whipping might be administered with only the linen between the flesh and the strap. The girls too were obliged to take off their stays, to receive their floggings with equal sensibility. He named a distinguished lady of that city who was thus punished in childhood.

Farther south the teachers, mostly impudent and drunken adventurers from England and Ireland, with little learning and less character, were even more cruel and brutal in their punishments.

Some of the teachers were ingenious in the tortures they inflicted on the children. One of the Boston teachers, tired of feruling or blistering the hands of the children by heavy blows from his ruler, adopted the plan of making them remove their shoes and stockings, and then beat them with the same massive ferule on the soles of their feet. Another would partially split a stout hickory twig, and forcing the split ends apart, would put them astride the nose of a child, who had committed any slight offence. Tying up by the thumbs for a whipping, or putting a cord round the neck and drawing it up to a nail or peg, so that the offender could only stand on his toes, and then applying the birch, were frequent modes of punishment. The writer has seen the last-named plan resorted to as late as 1829. Old Master Dow, who taught in New London for seventy years, had two strips of board joined, flatwise, by a hinge, and compelled the juvenile offenders to put their fingers between the two, when he would draw them together and secure their fingers by a loop at the other end of the board.

There was not much improvement in the teaching or discipline in the first twenty years of the present century. A few more text-books, a little more geography and arithmetic, but no maps, rarely a very little grammar, but the birch rod, the strap, and the ferule in just about the same quantity as before. This was all the advance to the year of grace, 1820. In proof let us give Henry Ward Beecher's testimony of "the District School as it was" in Litchfield County, Connecticut, in 1818-1821.

"It was our misfortune, in boyhood, to go to a district

school. It was a little square pine building, blazing in the sun, upon the highway, without a tree for shade or sight near it; without bush, yard, fence, or circumstance to take off its bare, cold, hard, hateful look. Before the door, in winter, was the pile of wood for fuel, and in summer there were all the chips of the winter's wood. In winter we were squeezed into the recess of the farthest corner, among little boys, who seemed to be sent to school merely to fill up the chinks between the bigger boys. Certainly we were never sent for any such absurd purpose as an education. There were the great scholars—the school in winter was for them, not for us picaninnies. We were read and spelt twice a day, unless something happened to prevent, which did happen about every other day. For the rest of the time we were busy in keeping still. And a time we always had of it. Our shoes always would be scraping on the floor, or knocking the shins of urchins who were also being 'educated.' All of our little legs together (poor, tired, nervous, restless legs, with nothing to do) would fill up the corner with such a noise, that every ten or fifteen minutes the master would bring down his two-foot hickory ferule on the desk with a clap that sent shivers through our hearts, to think how that would have felt, if it had fallen somewhere else; and then, with a look that swept us all into utter extremity of stillness, he would cry, 'Silence! in that corner!' It would last for a few minutes; but little boys' memories are not capacious. Moreover, some of the boys had mischief and some had mirthfulness, and some had both together. The consequence was that just when we were the most afraid to laugh, we saw the most comical things. Temptations, which we could have vanquished with a smile out in the free air, were irresistible in our little corner, where a laugh and a spank were very apt to woo each other. So, we would hold on, and fill up; and others would hold on and fill up too; till by-and-by the weakest would let go a mere whiffet of a laugh, and then down went all the precautions, and one went off, and another, and another, touching the others off like a pack of fire-crackers! It was in vain to deny it. But as the process of snapping our heads, and pulling our ears, went on with primitive sobriety, we each in turn, with tearful eyes,

and blubbing lips, declared 'we did not mean to,' and that was true; and that 'we wouldn't do so any more,' and that was a lie, however unintentional; for we never failed to do just so again, and that about once an hour all day long. Besides this, our principal business was to shake and shiver at the beginning of the school for very cold; and to sweat and stew for the rest of the time before the fervid glances of a great box iron stove, red hot.

"Oh dear! can there be anything worse for a lively, muscular, mirthful, active, little boy than going to a winter district school? Yes. Going to a summer district school! There is no comparison. The one is the Miltonic depth, below the deepest depth.

"A woman kept the school, sharp, precise, unsympathetic, keen and untiring. Of all ungenerous ways of fretting little boys, doubtless her ways were the most expert. Not a tree to shelter the house, the sun beat down on the shingles and clapboards till the pine-knots shed pitchy tears; and the air was redolent of hot pine wood smell. The benches were slabs with legs in them. The desks were slabs at an angle, cut, hacked, scratched; each year's edition of jack-knife literature overlaying its predecessor until there were cuttings and carvings two or three inches deep. But if *we* cut a morsel, or stuck in pins, or pinched off splinters, the little sharp-edged mistress was on hand, and one look of her eye was more than a sliver in our foot, and one nip of her fingers was equal to a jab of a pin; for we had tried both.

"We envied the flies—merry fellows; bouncing about, tasting that apple skin, patting away at that crumb of bread; now out the window, then in again; on your nose, on neighbor's cheek, off to the very school-ma'am's lips; dodging her slap, and then letting off a real round and round buzz, up, down, this way, that way, and every way. Oh, we envied the flies, more than anything except the birds. The windows were so high that we could not see the grassy meadows; but we could see the tops of the distant trees, and the far, deep, boundless, blue sky. There flew the robins; there went the blue-birds, and there went we. We followed that old Polyglot, the skunk black-bird, and heard him describe the way that they talked at the winding up of

the Tower of Babel. We thanked every meadow lark that sung on, rejoicing as it flew. Now and then a 'chipping bird' would flutter on the very window-sill and peer in on the medley of boys and girls. Long before we knew it was in Scripture, we sighed: 'Oh that we had the wings of a bird'—we would fly away, and be out of this hateful school. As for learning, the sum of all that we got at a district school, would not cover the first ten letters of the alphabet. One good, kind, story-telling, Bible-rehearsing aunt at home, with apples and ginger-bread premiums, is worth all the school-ma'ams that ever stood by to see poor little fellows roast in those boy-traps called district schools."

THE GREAT PUBLIC AQUARIUM AT NAPLES.

AN account of this immense undertaking is given by a contemporary, and is of sufficient interest to have a place in our columns.

The building, which is under the direction of M. Anton Dohru, is rectangular, measuring 100 ft. by 70 ft., with a height of 40 ft., and is 100 ft. from the sea. The lower part is to be occupied by the tanks of the great aquarium, to be opened to the public; and the upper will contain 24 rooms for laboratories, a library and collections, with lodging rooms for three or four zoologists. There will be fifty-three tanks in the lower story, one of them 32 ft. long, 10 broad and $3\frac{1}{2}$ deep; another, 26 ft. long; and twenty-six, 3 ft. by $3\frac{1}{2}$ ft. The tanks throughout are furnished with a continuous current of sea-water. Up-stairs, the library room is large enough to hold 25,000 volumes. The principal laboratory room will contain 20 to 30 tanks of different sizes; and besides there are private laboratories for the chief zoologist and the first assistant, and other small laboratory rooms, and rooms for collections.

The energy of "young Italy" shows itself in every department. She has not only raised the standard of her armies in numbers and excellence, but is also making great advances in science. If the idea is fully carried out, the Aquarium of Naples will rival those of Paris and Amsterdam.

*THE SCHOOL OF THE NATION AND THE
SCHOOLS OF THE SECTS.*

“**W**HY didn't you send your boy to — University?” asked a —ist Minister of a father whose son was just completing his college course; “aren't you afraid he will stray away from our church?” The institution in which the young man was pursuing his studies was a thoroughly Christian College, though free from all obligation to speak the shibboleth of any sect. The instructors were connected with different denominations, yet held the Christian Faith by as firm a grasp, and set the Sacred Scriptures in as high a place, as if their names had been written together under the Thirty-nine Articles, or they had vowed a common allegiance to the Catechism set forth by the Westminster Assembly. Of good example and holy admonition and tender entreaty on the part of members of the faculty, there was much more than was heeded; but of sectarian proselytism there was none. The whole atmosphere of the college was pervaded by distinctively religious influences, yet no one sect, as such, ever came into relative prominence. Whatever may be thought to differentiate a Congregationalist or an Episcopalian or a Methodist from a simple Christian, was kept in stern—no! in easy and natural abeyance.

We are aware that some will deny that men of varied and positive beliefs can long work together without jarring and friction. We can only affirm that, for two generations now, they have actually worked on in heartiest coöperation, and that no signs of dissension are yet visible to those who have most intimate knowledge of the experiment. We suppose that such instances of union and sympathy in educational work are by no means so rare—we are certain they are not so difficult to realize—as some profess to think. Christianity can be inculcated, and the lives of young men and young women drawn toward the true and the right, without teaching immersion, or infant baptism, or any particular theory of apostolic succession. It *can* be so taught, we say; for it has been and is. There is room enough elsewhere for these circumferential matters, about which the

best of learned men have always differed. There is room enough here—in undenominational institutions—for all the central truths, the core and substance of religion.

The daily and weekly press, the religious papers included, for the most part discuss the subject of religious education, as if only the Romanists were bent on having separate schools. Is it so? Look through the State of New York, and what do you see? Roman Catholic schools to be sure, and not a few of them; but also schools Methodist, Episcopalian, Baptist, Universalist, and so on; each bidding loudly for the children of those of its own special faith, and each doing something, mostly in an unobtrusive way, to bring stray lambs from other flocks into its own (true) fold.

Probably this last statement will be denied, and with some heat of indignation; but if it have no basis of truth, what, pray, is the *raison d'être* of these institutions? Is their intent simply to prevent the —ist or —ian lambs from straying? Then, it would seem, some *means* must be used to keep, or win them from the unblest ways of other sectaries, and attach them to the true *doxy*. Religious routine and observance have much power in this direction, even in the absence of direct doctrinal teaching. Our friends, the Romanists, understand this matter quite as well as we do. It is not by syllogism and exhortation that Protestant girls, trained in a convent, are led to renounce the simple faith of their mothers, and bring their prayers to Mary. There is a method as much surer as it is quieter and less likely to engage the attention. The very air and whole environment of the school life may be such that ear and eye,—nay, each intellectual faculty, may drink in subtle influences whose combined result, if sufficient time is given, shall be the complete reversal of every youthful conviction and belief, however instinctive and soul-inwrought they may have seemed. We do not say that it is wrong to wield such influence. We only insist that, if the sectarian schools have any preservative efficacy—if they are so organized and worked as really to *retain*, then they must have enough of sectarian bias, or tone, or flavor—call it what you will—as to *draw*, to proselyte.

How much firmer ground—what an impregnable position even, would the Baptist or Methodist, for example, occupy

in his debate with the Romanist, if only he did not in practice admit the truth of the latter's doctrine of education! The Romanist dares not trust his child in the "godless" schools of the State; and the Baptist has twenty good reasons for the maintenance of separate institutions, where the teachers shall be of his order, and the biblical instruction conformed to the specialties of his own creed. We even have Baptist "National Educational Conventions," in which, without admixture of other sects, the great questions of popular and collegiate education are discussed. Far be it from us to disparage these meetings, or to depreciate their results for good! And yet, for the life of us, we cannot see why the questions named above cannot be considered in open convention by Christians of every name. Where *can* we meet, if not on the common ground of the public school and the University? Is Latin, or Science "divided?" Must twenty different spelling-books be made for us?

When we come to the professional training of a religious ministry, there may be occasion for separation; yet even here, it would seem as if special chairs of Theology and Church History in one General Theological Seminary might suffice. The original languages of the Bible are taught in pretty much the same way, we suspect, at Princeton, and in the Episcopal Seminary in New York City; and Homiletics varies, not more with the denomination, than with the personal peculiarities of its expounder. At all events, up to the point of taking the bachelor's degree, we find no valid cause why the Campbellite and the Sandemanian should not con the same books and frequent the same halls, from A B C to Plato and Political Economy. If only the moral instruction imparted is free from all leaning toward any sect or party, it certainly argues a lack of faith in the truth, that disputed and confessedly non-essential matters should not be left to the Church and the Sunday-school and the Family. We need, all of us, some infusion of the robust and breezy confidence of John Milton:—"though all the winds of doctrine were let loose to play upon the earth, so truth be in the field, we do injuriously * * to misdoubt her strength. Let her and falsehood grapple: who ever knew truth put to the worse in a free

and open encounter? * * * What else [than some shape of truth] is all that rank of things indifferent, wherein truth may be on this side, or on the other, without being unlike herself?"

One would think the Churchman might be trained to revere his church and love his liturgy, without having them connected each day with arithmetic and spelling-book. The Congregationalist need not fear that Arminianism will be secretly sandwiched between the *pons asinorum* and the binomial theorem. Nor would the Baptist seem to make a wise expenditure, if he raise a special fund and maintain a separate faculty to hand down the true and exact signification of one Greek verb and two Greek prepositions. We suppose that Universalist and Methodist Greek and Hebrew even, with the possible exception of a half dozen etymologies, are substantially the same. We respect every man's conscience, and meddle not here with any man's religious opinions. He has a right always to hold them, and in proper time and place, to advocate them. We wish only to enter our protest against the sectarianizing of our schools of art and literature. We are pained to see this great Public Common parcelled out into sectarian preserves.

This subject has, to us, a very practical aspect. This multiplication of sectarian seminaries is a chief source of weakness and inefficiency in the common schools. In order to flourish, these need something more than buildings and teachers. It is not enough for the citizen to pay taxes. The better educated and the wealthier classes of the community must have their interests centered in them; must have a personal concern in their management and welfare. If *they* neglect the "People's College," the instruction imparted in it will be certain to be but indifferently good, from the lack of all thorough and competent supervision.

And it is precisely these classes which most largely patronize denominational institutions. Their children being withdrawn from the public school, their care and thought are seldom given to it. The school at their door gets no larger share of their attention, if only the pupils are not troublesome, than if it stood by the banks of the Indus. It is a sort of missionary institution, designed for the help of

the home poor! Even the interest that comes from voluntary charity is wanting. Not seldom the money that supports the district school is grudgingly paid, and solely because the inexorable State requires it.

Now this is all wrong. In direct proportion as the patronage of the public is diverted from the public schools, are those schools weakened not only, but degraded in the general estimation. Every private, or non-public, school does more than lessen the number of pupils in the public school; it withdraws the interests and the sympathies of those families which patronize it. If the more intelligent, who are at the same time generally the more wealthy, class of citizens, knowing the faults and deficiencies of the schools, have no inducement to remedy them, then the chance for making them what they should be, is small indeed. Their own children being provided for at some church (or other) private school, the motives that would else urge them to reform and improve the public school lose all force; and hence that disastrous *let-alone* policy which characterizes school management in so many sections of the country. We know not why the Common Wealth should not supply more commodious and healthful school rooms, more abundant apparatus, more accomplished teachers, than private interest and private purses can command. That in some States it does not, is plain; and the trouble seems to us to lie more in the general apathy and indifference of the well-to-do and the educated, who can get on without these schools, than in all other causes combined. We believe it to be in their power in one six months to double, and in a year to quadruple, the practical outcome and benefit of the present State System of Instruction. The system may be capable of improvement,—it probably is; but the system is ten times better than the way in which it is sometimes operated.

In this day, when from more than one quarter, a fierce and malignant assault is made upon the American School System, it becomes the friends of that system to rally about it, not with words only, but with practical help. Union is strength. In its educational institutions, as in its ecclesiastical, Protestantism weakens itself by needless division.

There is lack of efficiency and completeness of organization. At the base of the educational structure of the Nation stands the common school; at the top is the State University; between these two there seems to be some part of the pyramid wanting; its proportions lack symmetry. The want is recognized, and the attempt is made to supply it by academies under the patronage and control of this and that denomination. We do not affirm that, as things now are, these schools do not fill a real void; they seem to be doing a work for which other adequate provision is not yet made. But, were things as they should be, were a perfect scheme of public instruction completely realized, leaving no gap in the ascending series of schools, then it seems probable that the loss of these sectarian seminaries, many of them but half endowed, and still a larger number absolutely without productive funds, would be a large gain to the educational interests of the country. We could then with more alacrity and a heartier will close up the ranks and stand together for the defense and perfecting of our priceless heritage, the system of Free Schools.

THE SIGNAL SERVICE.—The confidence of the public in the daily weather “probabilities” is not misplaced. We find in their report that up to Nov. 1, 1871, 69 per cent. of these prognostications were verified, and from that time to Oct. 1, 1872, the average reached 76 $\frac{1}{2}$ per cent. This percentage would be much greater were reference had to those predictions which were verified within a few hours after the time for which they were made. Greater accuracy can be obtained as the number of stations is increased. The record shows an enormous amount of labor done. During the year 35,990 letters were sent from, and 176,306 received at the chief station, Fort Whipple, Va. 768,046 words of weather report were received, and 18,742 sent away. The publication of these reports reached the number of 30,000,000. The practical results of this service have been, that, during the year, no great storm has traversed the United States without previous notice having been given.

HEALTH AND EDUCATION.

LIKE everything else education has a fixed value. It is worth just so much and no more. The term Education is used here, in its general sense, without reference to the relative value of different kinds of knowledge. Men speak of each other as educated and uneducated, and in this manner, education, as contrasted with the want of it, is referred to in this article. Now, that an education is most estimable, no intelligent person will deny, that it is inestimable, is, under certain circumstances, worthy of doubt. Perhaps an extreme view of its value has led people sometimes to forget that the possession or acquirement of it may be associated with such conditions as greatly to lessen its worth.

The idea is partially expressed in the opinion of the boy who was flogged through the alphabet, that "he had gone through a great deal for the sake of a very little," and has been illustrated also in the lives of many who have wrought painfully through years of unremitting and exhaustive study, to find that with broken physical health the acquired prize was almost useless. Not only does ill health injure the subject of it, and mar his happiness, but it also often taints those thoughts and actions of the invalid which influence those about him. The unhealthy and injurious tone of many books has in all probability depended upon physical disease in the authors, and the same is true of what are called "unhealthy" sentiments, whether written or spoken.

Yet notwithstanding all the evils which the acquirement of an education, as now conducted, may entail, the great advantages which it confers are fully appreciated. The "weariness" and sickness which "much study" brings are overlooked, and there is an increasing effort for a higher standard of education. It is felt that not only individual but national happiness and influence are, as a rule, increased by knowledge, and that this thread lies along the path of general progress. In our own country we know that the enlightenment of the people is essential to the perpetuity of our institutions.

We must consider it, then, as an established fact, that facilities for a thorough education are among the necessities of the times. And probably the standard will be more and more elevated in accordance with the requirements of succeeding years.

But can we not have the benefits of education without its disadvantages? Can we not attain knowledge and at the same time possess that *sana mens in sano corpore* which has thus far been so rare? It has long been a popular conviction that hard study and the confinement incident to it are associated with ill health; but only in later years has the importance of physical education been in any degree adequately regarded.

With that love of exact knowledge characteristic of our times, inquiries have been instituted by scientific men for more clearly ascertaining the injurious influence of schools upon the health of pupils. Without a knowledge of the evil, how can a cure be discovered? It is among the young and in the schools that the ills must be sought for, since the remedies, to be efficacious, must be applied in early years.

Those who have read the translated report of Virchow upon the injurious influence of schools upon the health of pupils, which has appeared in these columns, will see that a commencement has been made in the exact study of this most important subject. And the labor promises to result in an abundant harvest. It is found that education, as now acquired, is often purchased only at the price of suffering and sickness. Headache, near-sightedness, consumption, contagious disease, dyspepsia and spinal curvature, are some of the maladies which are found to exist in schools, and to be in a great measure dependent upon the present method of "going to school." Now our common sense indicates that these evils cannot be necessary concomitants to the acquirement of knowledge, and we therefore inquire what causes exist at present, to which these diseases may be attributable.

Some of these causes almost force themselves upon our notice. The overcrowded, overheated and illy-ventilated school-room which some of us have studied in or visited, the protracted school hours, the constant bending forward

of the head and a forcing of the immature brain, these are some of the evils which come at once to mind. Then, to quote from the report, "defective light, a bad arrangement of the windows, careless methods of sitting, the use of too small type, and a too fine handwriting, have more or less agency in the production of near-sightedness. It is also thought that a defective form of school bench has been sometimes instrumental in causing cerebral consumption, defective respiration, and spinal deformity." As an additional agent in the production of defective vision, a pale writing ink, the use of which produces a severe strain upon the sight, should be mentioned. The effect of this can easily be appreciated. If any one wishes to test it, let him try the experiment in an apartment where the light is of ordinary strength, and he will probably observe a similar strain upon the eyes to what would be noticed if writing by twilight. If this experiment is not satisfactory, let him write first with a pale, and then with a full colored ink, and notice how contentedly his eyes will rest upon the more distinct words, and with what greater ease will follow the movements of the pen as it forms them. This is an illustration of but one of the many details which should receive the notice of those who have the education of the young under their care. Life is said to be made up of trifles; at all events, no one should under-estimate their influence in forming the great totals of health and sickness, happiness and misery, life and death.

Let us consider for a moment one other point which should receive the careful attention of all interested in education, especially those who instruct the youth of this dyspeptic nation. How important it is that a general knowledge of the nature of different kinds of food, with the time and manner in which it be taken, should be widely diffused in such a form as to be readily understood. Enforcement of a proper diet—and by the term diet is not meant *insufficient*, but suitable food—depends to a great degree, except in boarding-schools, upon parental influence; yet teachers can do much in inculcating correct ideas. We have known of boys who, in recess, ate their lunches upon the run, in total ignorance or carelessness as to the injury which such a

proceeding would have upon the digestive organs. What does a boy care for that pneumogastric nerve, custodian of the stomach, which will rise grimly against him in after years, and mulct him heavily in costs!

The present article, however, is not intended to be more than supplementary to the Report to which it refers. The subject is one which must be met and thoroughly considered. Opinions differ much as to what constitutes an education, yet it will be generally conceded that *any* system which produces well-crammed brains with enfeebled health is manifestly defective. "Mind is united to matter, but matter is also united to mind," and, as has been previously observed, a sickly constitution too often illustrates itself by dwarfed and morbid ideas. Surely the problem of giving the best education with the fewest evils to *young Americans* is of vital importance, and the opinions of a leading physiologist like Virchow are worthy of careful consideration. They are worthy of consideration not only because we have reason to respect opinions from such a source, but also because they may suggest improvements in our own educational system which will lead to an improved mental and physical maturity in our own country.

No doubt much good mental work is done by invalids. Still how much better would be their achievements, unbiassed by the influence of physical indisposition. Our language supplies many expressions in which this parasitic effect of disease seems to be recognized, and when men have made comparisons between *sentiment* and "sickly" sentimentality, or have characterized certain ideas as *vigorous* or *morbid*, or *sound* or *diseased*, they have perhaps spoken "better than they knew."

To conclude, with the words of Sir Benjamin Brodie:—"In order to make the most of the intellectual powers, the animal system should be maintained in a state, as nearly as possible, approaching perfect health. The state of mind, whether as regards the moral or the intellectual, is, to a very great extent, subjected to the influence of physical causes."

F. A. BURRALL, M.D.

GEOGRAPHICAL NOTES.

UNITED STATES.—Prof. Hayden's expedition returned from Idaho to Washington in November, after a very successful exploration of the region west of the headwaters of the Missouri, which proves to be another Geyser region of extraordinary richness. The photographs and water-colors obtained are important contributions to collections of Rocky Mountain scenery.

—Mr. William H. Dall arrived in San Francisco from Alaska a little more than a year from the time of setting out (Aug. 29, 1871). His stay was principally upon the island of Unalaska, where he made some archæological discoveries of no little interest. In a sea-side tomb containing seven skeletons, he found a number of familiar savage implements, and two bone labrets (discs for distending the lips horizontally), besides a lot of needles made of the wing-bones of birds, a needle-case made of the humerus of some large bird, closed at each end by a wooden stopper, bone awls, stone knives, a whetstone of fine-grained sand-rock, and a little case of birch bark containing plumbago. Neither the birch, the sand-stone, nor the black slate of which the knives were made, nor the plumbago, exists on the island. The early Aleuts were accustomed to preserve the remains of their more eminent dead by removing the viscera, stuffing the body with dry grass and drying it. This was placed in some dry cave, dressed as in life, ornamented with gay apparel and covered with wooden carvings, the most remarkable of which were masks of large size, painted of different colors and ornamented with feathers, tufts of hair, and bristles from the deer. A very great variety of other carvings were also placed in these caves, and sometimes the bodies, placed in natural attitudes, were covered entirely with carved wooden armor, or placed in a miniature canoe or bidarka, armed as if hunting or holding a paddle. Women were represented as if sewing, dressing skins, or nursing their infants; old men as if beating their drums, as they do during the winter-dances in Esquimaux villages to this day.

AFRICA.—Letters from Livingstone dated July 1 at Unyanyembe, to Lord Granville and Sir Bartle Frere, state his purpose to be to make a complete circuit, by the south and west, of his recent discoveries or half-discoveries. That is to say, he will round Lake Bangweolo by the southern shore, proceed “straight west to the ancient fountains reported at that end of the watershed.” “Thence he goes eight days north to the Katanga copper mines, which are only about ten days southwest of the underground excavations used as places of retreat and safety.” These also he will visit, return to Katanga, and make for the head of Lake Lincoln, twelve days north-northwest. “Arrived there, I shall devoutly thank Providence, and retire along Lake Kamalondo towards Ujiji and home.” With ordinary success he hopes to be back at Ujiji by March 1, 1873. This is not exactly the programme that one might have expected of the staunch old man, but it cannot fail to be rich in results. He still clings to the notion that he is working away at the Nile, but Petermann, in his *Mittheilungen* (as reported by Dr. Chas. Beke in the *Athenæum* of Oct. 26 and Nov. 2,) connects the Lualaba system with the Congo, on grounds that seem irrefragable. These, briefly stated, are: (1) The Lualaba cannot flow into the Albert Nyanza, because its level is the same as that of the Bahr el Djebel at Gondokoro—that river issuing from Albert Nyanza; and because it is barred from the lake by lofty mountains. (2) It cannot join any of the western head-streams of the White Nile, because it must then flow across an east-and-west stream (the Welle) crossed by Schweinfurth in $3^{\circ} 37'$ N. lat., and $28^{\circ} 10'$ E. long., beyond the southern basin of the Bahr el Ghazal, and not belonging to the Nile system; and because its volume of water is at least 19 times that of the Bahr el Ghazal. (3) It cannot join the Shari or Benuë (rivers of the Soudan) because the seasons of flooding are opposite. (4) It coincides in the time of its flooding with the Congo alone. (5) The even volume of the Congo points to lake feeders. (6) If the area of the Chambezi-Lualaba system is counted out, the area of the watershed allowable to the Congo would be insufficient to account for its volume. Of Schweinfurth's discoveries we must speak at another time. Mr. Stanley

reached New York and had his first public reception Nov. 22.

ASIA.—The most beautiful, historical, and important, as well as the highest, mountain in Japan is Fuzi-yama. Though its height has been repeatedly measured, it has never been done with that scientific accuracy which is desirable, and which is attained with comparative ease. An officer of the Royal Marines (British) at Yokohama made the ascent of the peerless mountain Sept. 9th. Very delicate thermometers and barometers were used, and the readings of the instruments on the summit were corrected by others kept at the sea-level. By using three different methods of calculation, taking the mean of these, and applying all the necessary corrections, the height of Fuzi-yama was found to be 13,080.32 feet. It may be remembered by those interested, that previous measurements have varied between 12,000 and 14,418 feet. Fuzi is but an ash-heap, a cone of lava and clinker. At the top were lichens only. The crater, by approximate measurement, was found to be $2\frac{1}{4}$ miles in circumference, and its depth about 440 feet. Many thousands of pilgrims ascend it during the summer months. It is thought to be the most beautiful mountain in the world, being of an almost perfectly symmetrical form, and standing entirely alone. The next highest mountain in Japan, is Hakusan or Siro-yama (White Mountain, Mont Blanc). It is situated near the West coast, in the provinces of Yetsizen and Kaga. It is one of a range, and like Mount Fuzi is an extinct volcano. It is also sacred, and is ascended yearly by thousands of pilgrims. The writer was the first foreigner who ever ascended Hakusan. He measured its height, and estimated it, in the usual manner, to be 9,200 feet. With more perfect instruments, a difference of a few hundred feet may be obtained. Nearly all the large mountains of Japan are extinct craters, and a few of them are occasionally active. Hakusan is covered with snow about eight months in the year, and even in summer is streaked with white. Like Fuzi-yama, it is visible on a clear day, at a distance of one hundred miles or more, so clear is the air of Japan. Previous to the ascent and measurement made as above, Hakusan had been supposed both by the

natives and by foreigners to be higher than Fuzi-yama. (See Humboldt's *Cosmos*, Vol. V., page 352—Harper's Edition, 1860.)

[Stieler's new Hand-Atlas, Part VIII., gives the height of Hakusan at 8,178 feet, and that of Fuzi-yama at 14,177 feet.]

W. E. G.

Cartography.—Keith Johnston has published a sketch-map of the lake region of Central Africa, showing Livingstone's and Stanley's routes. The same or a similar map has been published by T. Ellwood Zell, Philadelphia, and is sold with covers for 25 cents.

—The number of exploring expeditions sent out at the close of 1872 was noticeably large. We may mention, first, two naval expeditions to continue the surveys for a ship canal through the Darien and Nicaragua routes, in charge of Commanders Selfridge and Lull respectively. The initial point for the former was on the Pacific side of the Isthmus, from whence the navigable waters of the Atrato River could be most easily reached; for the second, Greytown, on the Atlantic.

2. An expedition organized at the Navy Department by Commodore Wyman, its hydrographic chief, to explore the seas between our Pacific States and China and Japan, and construct more accurate charts for the benefit of commerce. Other scientific researches will be subordinate to the work of cartography.

3. The American Palestine Exploration Committee's expedition, under charge of Lieut. Edgar Z. Steever, of the United States Army, who will be accompanied by Prof. J. A. Paine, as naturalist and archæologist, and Mr. Edward A. Van Dyck, U. S. Consul at Beirut, as linguist.

4. A British Admiralty expedition round the world, in the *Challenge*, Capt. G. S. Nares, with a distinguished scientific corps headed by Prof. Wyville Thomson. Its course is thus described in *Nature* of Oct. 31, 1872:

"The vessel, which is at present at Sheerness, will probably go round to Portsmouth about the middle of November, and sail from thence in the beginning of December for Gibraltar, the first haul of the dredge being made in the Bay of Biscay, if the weather should chance to be favorable. From Gibraltar she will proceed to Madeira, thence to St. Thomas, the Bahamas, Bermuda, the Azores; from thence to Bahia, touching at Fernando Noronha; then across to the Cape of Good Hope, and, after a stay in that neighborhood, southward to the Crozetts and Marion Islands and Kerguelens Land. A run southwards will then be made as far as possible to the ice, and the course thence be made to Sydney. New Zealand, the Campbell and Auckland groups, Torres Straits, New Guinea, and New Ireland

will then be visited. A long cruise of perhaps a year will then be made amongst the Pacific islands; thence the expedition, passing between Borneo and Celebes, and visiting Luzon and its neighborhood, will proceed to Japan, where a stay of two or three months is expected. Thence northward to Kamchatka, whence a run will be made northwards through Behring's Straits, and then through the Aleutian Islands, southward to Vancouver's Island, and so through the deep eastern region of the Pacific by Easter Island, and possibly by the Galapagos Archipelago to the Horn, and thence home. The voyage is expected to take about three and a half years."

5. A Royal Geographical Society's expedition, under Lieut. Grandy, R. N., called the "Livingstone Congo Expedition," landing at St. Paulo de Loanda, and exploring the course of the Congo with reference to its junction with the Lualaba. Another, under Lieut. Cameron, R. N., accompanying Sir Bartle Frere to Zanzibar, thence to penetrate into the interior under his auspices and instructions. These two expeditions ought to complete our knowledge of the main features of Inner Africa south of the equator.

6. Sir John Lubbock and Mr. Grant Duff's "pre-historic" excursion in Asia Minor.

7. An exploration of the Faroe Islands by the United Steamers Company of Copenhagen, primarily to ascertain the extent of the coal deposits which this Company is to work, under a grant from the government, but also to investigate the general geology and natural history of these little-known islands.

8. We may add here, as not previously noticed, the soundings carried on in July, August and September by the *Pomerania*, this time in the Cattegat and Skagerack, along the coasts of Sweden, Norway, Denmark, England and the Shetland Isles.

Photography.—There is no stage of education in which the so-called "object-teaching" is not only valuable but indispensable. We are apt to associate it with our infant schools exclusively; but it is the basis of all scientific training, and the condition of scientific attainment and progress. For this purpose we gather our great collections in all branches of inquiry—in natural history, geology, chemistry, botany, the arts of man; and the first thing which the student must do is to bring himself in contact with the *subject-matter* of his special pursuit. He must not trust merely to books and the descriptions contained in them, he must actually handle the fossils of past epochs, the coins of extinct dynasties, the shells of ocean and river, the elemental substances of earth, air, and water; examine the sun through the spectroscope, and the cell-formation of plants through the microscope; break the primeval rocks with his hammer, build his hut on the glacier to mark its motion, dissect the human body, or visit the temples of the ancients and the cathedrals of the Middle Age. The service, however, which pictures may render those who

lack the opportunity of travel, who have no access to museums or laboratories, or even libraries, is very great. In some branches their assistance is so considerable as almost to dispense with the personal contact of which we have been speaking; as, for example, one may become a very good judge of art without ever having been abroad.

The part played in this by photography is of the highest importance, but thus far our schools have been but little benefited by it. With a view to stimulating them, we have concluded to add a new department to these Notes, which we herewith introduce. The facilities of the large establishment of Messrs. E. & H. T. Anthony & Co., 591 Broadway, have been kindly placed at our disposal, and we shall from month to month notice a few of the novelties with which it is continually stocked. Our first recommendation is for every school and school-room to provide itself with a stereoscope, and to begin a collection of views bearing upon the principal studies taught. The hand stereoscopes, of Dr. Holmes's pattern, are good enough for all practical purposes. They can be had, with the best lenses, for one dollar and upwards. Twenty of these would be more useful than one of the upright kind, holding 100 views, and permitting two observers to use it at the same time (price, \$20 and upwards). But there is some saving of time in using these uprights, and they make it easy to group a series of views relating to one subject, to be studied in connection with each other.

The most remarkable photographs now to be seen at the Messrs. Anthony's, are the order-books of Photographs from the Collections of the British Museum (First Series, in seven parts.) They represent: (1) pre-historic and ethnographical objects; (2) Egyptian; (3) Assyrian; (4) Grecian; (5) Etruscan and Roman; (6) antiquities of Britain and foreign mediæval art; (7) seals of sovereigns, etc. We have barely room to add that catalogues may be had on application, stating price singly and per set; and that unmounted the prints cost 70 cents each, mounted 87½ cents to \$1.35. The size is from 12×10 to 10×8 inches. Many of them would be highly suitable for framing and hanging upon the walls of our school-rooms.

Out of the vast assortment of stereoscopic views we present a few typical specimens, with a comment or two:

Mining views (Thos. Houseworth & Co.): No. 998, the lifting wheel; No. 975 the Arastra. These are illustrations of placer mining, "now not much followed in California, except by Chinese, Mexicans, and Indians, who are going over the old tailings." Mr. Nordhoff, from whose recent work on California we quote, gives a picture of the Arastra on p. 103. "It was used in the early days to pulverize the ore. It is a Mexican contrivance, rude, but—so miners say—effective." No. 1403, Hydraulic-mining—behind the pipes. Four powerful streams are playing against the base of a high bluff covering the gold deposit. "Water, brought from 100 or 150 miles away, and from a considerable height, is led from reservoirs through 8, 10, or 12-inch iron pipes;

and, through what a New York fireman would call a nozzle, 5 or 6 inches in diameter, is thus forced against the side of a hill one or two or three hundred feet high. The stream when it leaves the pipe has such force that it would cut a man in two if it should hit him." (Nordhoff, p. 100. Compare the wood-cut on p. 223).

Hurst & Sons, Albany, whose free museum is tolerably well known, have issued 36 stereoscopic views of their stuffed animals, etc. A scientific and popular description is printed on the back. No. 3 is a very good representation of the American wolf, from a specimen taken in New York State in 1865. He is a much less formidable character than the following.

No. 76 of F. York's series from the London Zoological Gardens—a live and hungry specimen of the gaunt European wolf, keeping guard at the mouth of his cage. No. 147—sea-lion with a fish—would answer very well for "The Walrus and the Carpenter" of "Alice behind the Looking-glass." The animal stands bolt upright, leaning in a most human manner with his flippers on the knees of his keeper. No. 156, a couple of giraffes, male and female; the former being the larger and taller. As they stand not far from the wall, we may get at their height by counting the bricks. An American brick (set in mortar) is $2\frac{1}{2}$ inches thick; an English somewhat broader, say 3. Forty-seven of these would make our giraffes about twelve feet high. Baker, who saw them in the valley of the Atbara (one of the Nile tributaries) in droves of 20 to 100, says they are from 16 to 20 feet high. No. 182, two African elephants, on which visitors have seated themselves, mounting by steps placed beside the animals. There are twelve of these steps, which a thirteenth would raise to a level with the larger elephant's back. Allowing eight to nine inches to a step, this would give nine to ten feet as his height. Baker says the African elephant is about a foot higher than the average of the Indian elephant, and measures (the bulls) about ten feet six inches *at the shoulder*, (the females) from nine to nine feet six inches. Twelve feet would be exceptional. The enormous ears shown in this photograph are characteristic of the African species. Baker "frequently cut off the ear to form a mat" on which to sleep; Livingstone shot an elephant on the Zambesi, whose ear-flaps measured four feet across and four feet five inches in depth.

Apropos of Livingstone, here is the London Stereoscopic Co.'s portrait of Stanley, with the negro lad whom he brought home with him, and who could be exactly matched in looks in almost any colored community in this country.

No. 1657 of the Out-of-Door Work Series (German) shows a couple of chimney sweeps, with their implements, about to begin business. The series is a "made-up" one, and is hardly to be recommended. It should have been taken from actual workers, and in the open air.

"Inferno, or Paris in 1870-'71," consists of illuminated views of the ruin worked in Paris by the two bombardments and the Communists.

No. 25 represents the Vendôme column overthrown; No. 27, the considerable remains of the Hôtel de Ville. These views are injured by pen-knife cuts, intended, with the aid of red tissue paper, to give the effect of flames when held up against the light.

COLLEGE MORALS.

A CAREFUL observer of American Colleges must have witnessed within a comparatively few years a very marked change in what may be termed College morals. This change has kept pace with the elevation of the Colleges in learning and educational facilities. It is a change which has not attracted as much attention as the multiplication of professorships, and the increase of endowments, but is nevertheless not less important than either. As the moral training of a young man is more important than his intellectual; as what he *is*, is a more momentous consideration than what he *knows*, it follows that an improvement in College ethics is more to be rejoiced at than their growth in numbers or scientific reputation.

The code of morals in American Colleges was derived in a great measure from the traditional system in the great English Classical Schools. The mutual relations which existed between teacher and scholar in these schools were not confidential, but antagonistic. The brutal practices of fagging and hazing among students were allowed. The higher classes exacted humiliating attentions and menial services from the lower. Similar acts of deference from the lower towards the higher classes were actually enforced by faculty regulation in the early history of American Colleges. The hat was to be carried under the arm while passing a Senior. The Freshman might be called upon by his superior to perform menial duties. These and such as these were usages which undermined the spirit of mutual helpfulness which ought to prevail among those brought together in the same institution. They produce the same kind of arrogance and cruelty on the one hand, and of rebellious opposition on the other, as the system of slavery produces in a country.

The spirit of antagonism between faculty and students was perhaps a growth of the effort to enforce these unwise regulations between students, and to carry out a system of offensive espionage with regard to their conduct. Natural frolicsomeness, reckless daring, unrestrained depravity, all had their share in widening the breach between them. It grew to be a settled tradition among successive classes that their professors were their natural enemies, and each class felt that it would lose its claim to respect if it did not carry on the war which had been bequeathed to it. They felt that in this war every expedient would be honorable, and every outrage justifiable. They formed for themselves, therefore, a code of morals for their lives in College, different from that which they had practiced before coming, and different from what they expected to conform to after they left. The maxims of truthfulness which they deemed in ordinary life binding upon them, in College life they took the liberty of modifying so as to permit evasions, prevarications and deceptions, and when hard pressed, an occasional fib. The golden rule, which in their Christian homes they had been taught to reverence and square their conduct by, they now interpreted not to include their professors, and hence not to forbid a concert of tin-horns under their windows, and the frightening and mortifying of their families by annoyances and insults. Their principles of honesty were so far relaxed as not to interfere with stealing the President's chickens, or with mutilating and defacing any property which happened to belong to their great incarnate oppressor and enemy—the College corporation.

This demoralization had not only affected the body of students, but had extended to the communities in which the Colleges were located. It was not only implicitly, but explicitly understood that College students were not to be held to the same rigid accountability for breaches of the peace as other men. Reputable members of society were found ready to apologize for and defend the offences of students as less reprehensible than the same offences in others. The reckless and criminal skylarking of young men in Colleges was treated among respectable families as a capital joke, when the same misdemeanors committed by others

would subject them to social ostracism. If perchance the depredations extended a little too far, and a citizen's melon patch was invaded, or a citizen's shed set on fire, or his horse's tail sheared, then, indeed the trick was dastardly, and deserved the severest punishment. But so long as the injuries were confined to the persons and property of College officers, as long as they hunted in their own legitimate "preserves," and made game only of the professors and tutors, then in the public estimation it was fair sport, and should not be dealt with too harshly. And scores of dear good men, and their dear good wives and daughters, were ready to raise their voices in horror at the cruelty of inflicting punishment upon a lively young man who had been caught girdling the trees on the College grounds, or stealing the Bible from the Chapel desk, or smearing tar upon the chair of a professor who was so unreasonable as to try to make the young hopeful study his lessons.

But we have said that a change for the better has taken place in College morals. It has been gradual but manifest. The days for the famous old College tricks are gone. Henceforth the College student is to look upon himself, and to be looked upon by others, as in no way different from any other young man, and to be held amenable to the same laws of morality and good breeding as are held to be binding on others. This change has been brought about by various influences.

1. The wall of artificial dignity which was originally thought to be necessary between professor and student has been pretty much levelled. We say *artificial* dignity, because that true dignity which is inherent in the gentleman and scholar, needs no artifice to maintain it. The true professor makes no claim for himself of superiority as a man over his students. He feels that he is only a companion and co-worker of these young men, and is only entitled to their reverence when he shows himself able to lead them in their career of learning. As a man, he claims only what he gives freely in return—kindness, courtesy and helpfulness. This artificial dignity had no small share in provoking the antagonism we have spoken of, and its decay has helped not a little to reestablish amicable relations.

2. The ordinary public sentiment in which the students find themselves has essentially raised its demands. The social circle in which the young man mingles does not treat quite so tenderly as it used to do, his boasted escapades, nor sympathize quite so warmly with him when a well-deserved punishment is inflicted on him. His father and friends at home, and his pastor and patron are not quite so ready as formerly to take up his case against the College authorities, and to try to make it so hot for them that they are glad to sneak out of the matter. It has come to be pretty much settled that if a young man offends decency, and commits crimes, severe discipline is not a bad thing for him, and may, if applied in time, save him from a worse fate.

3. These and other causes have produced their effect upon the common student mind. The young man who finds himself unsupported in his reckless course by local sentiment, and without much sympathy from the home government, also finds himself confronted by the manifest disapprobation of his College associates. The youth who could climb the lightning-rod and steal the clapper out of the College bell might have been quite a hero once, but now-a-days he is set down as an unmitigated nuisance. Falsehood no longer pays, because it forfeits for a man the good opinion of the College world. To haze a Freshman, or to steal the cornerstone of a new building, or to get tearing drunk, are no longer esteemed among College students such very manly achievements as to be rewarded with popularity and applause. To excel in learning, to acquire accomplishments of mind and person, to use faithfully the opportunities which parents and friends often purchase for him at great sacrifices, to sustain the honor and good name of his College in learning, eloquence, manly sports and gentlemanly bearing—these are the achievements which more and more are coming to bring to a man the good opinion of his College associates.

4. The methods of College government have received much consideration in later years among the best educators. The subject has been discussed in public conventions, in public journals, and in private conclaves. The result of these discussions has been to convince College officers that

in cases of notorious breaches of the law the offenders must be dealt with like any other criminals. In matters of ordinary infringement of College regulations, the College authorities are sufficient to deal with it. But when the offence becomes a breach of the law, and a crime against the public peace, then the punishment which the law prescribes should be inflicted. To shield a student from punishment when he has broken the law, makes the College authorities *participes criminis* with the offender. It is mistaken mercy, just as it would be a mistake to hide a thief, because we are so unfortunate as to know him. A general resort to this principle in our American Colleges will soon drive from them the flagrant offences of which they are occasionally the victims. To punish with the just rigors of the law, the reckless young men who would explode a keg of powder under a College building, or who would set fire to a barn, would be a help to College morals in every institution in the land. Why should the student who brawls in the street, or who steals a gate, or who smears with tar the Chapel seats, be treated any more leniently than other offenders? Why should a College officer be expected to stand still and have his property destroyed without "haling the offender before a judge," any more than any other citizen? And why should public opinion pronounce it so unwarrantable a step, if a professor vindicates his manhood by a resort to the same weapons that any other citizen would use? It is because College offences have been made so light of by the authorities that they are thought so light of by the student. He takes advantage of the immunity with which he has hitherto escaped, and in moments of recklessness commits crimes which the certainty of just retribution would make him shrink from. That the future policy of our best American Colleges is to be conformed to these simple dictates of common sense is certain, and it is this change of policy which, more than any one cause, has already gone so far towards driving rowdyism and traditional brutality out of College communities.—*David Murray, in The Targum.*

COMPULSORY EDUCATION.

THE question of compulsory education grows constantly in importance, and is daily more and more discussed. In the earlier times of the Republic, it was enough to provide facilities for education; because the people appreciated these advantages sufficiently to avail themselves of them. Since then circumstances have changed. The class who do not wish to be educated is constantly recruited by illiterate foreigners—those who have received no mental training, and do not desire it for their children. Poverty, laziness and indifference on the part of both parents and children, are the chief causes which keep so many from obtaining any education. By the Report of the Superintendent of Public Instruction for New York State for the year 1870, there were, in New York City, 300,000 persons between the ages of 5 and 21, and of these 238,386 regularly attended school. This leaves 61,614 non-attendants. From this number is to be deducted those who are taught at home—say 5,000; those who have not yet commenced going to school—say 10,000; and those who, for various reasons, have already left school—say 25,000. These estimates are liberal, and yet it leaves over 21,000 in this city alone, who receive no instruction. To reach this large class, the employment of coercive measures is proposed.

We have the experience of others to guide us. The system has been tried with satisfactory results in Prussia, and other German States. Whatever may have been the opposition against it at first, it now meets with general approval. In fact, it is only in the rarest instances necessary to enforce the law. So in one sense, education has ceased to be compulsory in Prussia. In Holland education is universal, although there are no legal enactments requiring attendance at school. This is the result of the intelligence of the people, and of the excellence of the school system. No person is allowed to teach, even in a private school, without having passed an examination before the proper authorities. It has been suggested that universal education would result from raising the standard of the schools—by improved methods

of imparting knowledge, and by greater culture among the teachers. This has undoubtedly had the desired effect in Holland. Dutch, English, French and German are taught in the common schools. A system of so much excellence commends itself to the people, and compulsory education is unnecessary.

In our country it would be impossible to attain or preserve such a standard of culture in the same way, because of the shifting nature of our population. It is highly desirable to improve our methods of teaching, and to have more cultivated instructors; but were both of these attained, we still would not accomplish our object. Nor would the working of a law enforcing attendance at school be so successful here, as in Prussia, or in almost any other country. It would constantly meet with opposition from newly arrived immigrants, and its results could not be perfect, because of the constant influx of uneducated adults. But we have a right to all the benefits which could be derived from it.

The advantages of culture, and the refining tendencies of education, do not properly come within the scope of this article. We are concerned with the practical benefits which the State derives from it.

It has been found that the large majority of criminals are ignorant persons. And it is not strange; for while it is not impossible for a child reared in ignorance to be an honest man, the chances are against him. Ignorance and vice are blood relations. Education gives self-respect. It raises a child in his own estimation above the totally ignorant around him, and separates him from them in feeling, if not in fact. As a rule, the vicious man will not have the same influence over a child of some education, as over one totally ignorant; for with the improvement in the child comes the desire to improve more, and a separation, more or less complete, between him and the man below him in mental attainments. It is to a great extent true that, in proportion as a government extends its system of schools, it may reduce the number of its prisons. As a measure, then, of prevention of crime, compulsory instruction has great advantages.

If a government is obliged to submit all political questions to the people, it has a right to demand that the people

shall be qualified to form an opinion on the subjects presented to them. They must have sufficient discipline of mind to enable them to weigh arguments, and to decide on their merits. Without these qualifications the voter is led by politicians, whose aims *are generally*, not the good of the country, but their own advancement. The evils of this are so continually brought to our notice, that it is needless to enlarge upon them. The instruction which a pupil obtains in a public school, enables him not only to read, and thus gain information, but the discipline which his mind receives makes him more competent to judge between arguments presented to him. The education which the public schools give would not make all men intelligent voters, but it would qualify a large number for the exercise of the elective franchise, and would be of great benefit to the State.

These benefits the government may take all lawful means to secure. The enactment by the State of a law enforcing attendance at some school for a certain time, would not be an undue interference with the rights of parents and guardians over their children. Everyone has a right to an education, and if parents neglect their duty in this respect, the government may step in and compel them to do justice to their children.

AN EXPERIMENT IN SAXONY.—A novel and most interesting experiment in the field of elementary instruction has just been resolved upon in Saxony. Hitherto, as everywhere else, so in that small but highly-developed kingdom, the youth of the lower orders, upon being apprenticed to a trade, have been left at liberty to forget the little they have learned at school. Attendance at Sunday-school and evening instruction, provided by the State and charitable societies, was perfectly optional. By a law just passed this liberty is abridged, and compulsory attendance at evening schools exacted for a period of three years. This is the first time, if we are not mistaken, in the annals of the world, that an attempt has been made by a State to extend the education of the humblest classes beyond the merest rudiments, and after they have entered upon the business of life.

CORRESPONDENCE.

ORTHOGRAPHY OF JAPANESE WORDS.

IN the AMERICAN EDUCATIONAL MONTHLY for September, 1872, under the heading, "Questions at a Teachers' Examination," the following paragraph occurs:—

To the question, "what is the capitol of Japan, and where is it situated?" elicited the information that Yeddo is now written with one d, on the authority of a correspondent of a New York newspaper writing from Japan.

"Which the same, I am free to maintain." Remarking, merely by the way, that the grammar sense and punctuation of the above paragraph might be improved, that same "correspondent of a New York newspaper writing from Japan," and now asking the pages of the EDUCATIONAL MONTHLY, will reiterate his statement made in the New York *Independent*. He also commends the pluck of the lady or gentleman teacher who reads the *Independent*, and profits by it.

One more prefacing and moralizing remark—there is nothing that sticks more persistently in the popular mind, than a false etymology. The errors which swarmed in the old geographies, with more than nine lives, live on; and are handed down from one generation to another. In these days of travel and intercommunication between nations, we hold it to be one of the first duties of an intelligent teacher to root up the old errors, and plant new seeds of truth, even though they may interfere with "what the book says."

Of all the instances of persistent false orthography, the spelling of Yedo with two d's is the most signal. Neither in sound, nor sense, nor on the native Japanese writing, can such an orthography be maintained. Let any Japanese pronounce the old name of the capital of Japan, (the new name is *Tokai*), and all that can be made of the sound is (y)E-DO; with the accent on the first syllable. The word Yedo is a compound word; and is composed of YE, which means, a bay, inlet of the sea, frith or fiord; and DO, which means a door. Yedo thus beautifully signifies "the door of the bay,"

or "bay-door," and tells the story of its own geography ; as any one may see, by looking at the map of Japan. It is as absurd to spell the word Yedo with two d's as to spell the word Mikado, Mikaddo. The word *do* in each instance, means the same.

Finally, to clinch the argument, the Japanese invariably write, in their *kata-kana* native alphabet, EDO, or YEDO.* The word is written with but two characters, and concerning the former, it is not fully settled whether it should be written *e*, or *ye* ; the vowel *e* having the Italian sound.

Our communications with Japan are becoming more frequent, our people are visiting Japan in increasing numbers. Japanese young men flock to our schools, while the United States has thus far furnished nine-tenths of the teachers of English in Japan, things pertaining to the once far-off *Zipangu*,† now enter into daily conversation, and newspapers and magazines vie with each other in treating of subjects relating to Japan and the Japanese, it behooves us, then, to give the subject of Japanese orthography and transliteration the attention which it deserves. That our people may do this, we hope, not alone for the honor of American scholarship and literature, but for the sake of simple truth, and much-needed order.

In the rather miscellaneous correspondence from Japan that appears in the American newspapers, only a few correspondents make the slightest attempt at any system in transliterating Japanese words. The correspondent of the New York *Tribune*, E. E. H., has done a good work in calling attention to the facts we speak of, and has shown an accurate and discriminating knowledge of Japanese elementary sounds. We wish his example could be followed by all who write on Japanese subjects. We are sorry to see the excellent work of Mr. Charles Lannan, of Washington, D. C., "The Japanese in America," marred not only by typographical and orthographical errors, which have called down the merciless criticism of the English press, but by errors and contradictions in the Romanizing of Japanese names which are inexcusable. Although this subject has been referred to by another writer, it will serve a good purpose to point out

(I=ye or e, F''=do=Yedo.)

† Marco Polo's designation of Japan.

the most glaring mistakes, and to show the easy remedy.

In the book referred to, the personal name of the Emperor of Japan, Mutsuhito, MU-TSU-HI-TO, is spelled in one place Montsohito, and in another, Moutsoukito. The Tai-kun's family name is printed as follows, Tokungawa, Tokugawa, Tokagawa, and Tokzawa. The names of the members of the Japanese Embassy have been written in Roman letters from the supposed sounds, instead of being transliterated from the actual pronunciation of the Japanese kata-kana. The old and incorrect spelling of Yeddo, Osaca, Shogoon, Tycoon, appear in this volume, and in some cases are varied in their orthography.

The correct rule for the translation of Japanese into English, and the one adopted by the scholars, interpreters and lexicographers in Japan, is to give the vowels the Italian sounds, invariably, and to avoid equivocal letters.

Thus—a is pronounced like *a* in father.

| | | | | | | |
|----|---|---|---|----|---|----------|
| e | " | " | " | e | " | there. |
| i | " | " | " | i | " | machine. |
| o | " | " | " | o | " | note. |
| w | " | " | " | oo | " | root. |
| ai | " | " | " | i | " | bite. |
| ei | " | " | " | a | " | bate. |
| au | " | " | " | ow | " | cow. |

S is used for the regular hissing sound, but never for the sound of Z; the letter C is never employed by the best scholars in Japanese; K is used for the hard guttural sound, and S for the soft sibilant. G is always a hard guttural, and is never used like J, or Y. In spelling the word Tokugawa, the name of the family of Shōguns, a native from the Northern provinces pronounces it as though it were spelled Tokungawa; but a native of Yedo or of the Northern or middle provinces, pronounces the G hard. There is also a difference in the pronunciation of the syllable *Si*,—being exactly the same as that of the ancient Sibboleth and Shibboleth.

The Japanese in America and England, following the false orthography of the people among whom they dwell, write their own names and the geographical terms relating to Japan, without any system, and thus prolong the disorder

and lead others astray. We heard of one high U. S. official who refused to adopt the rational system of Romanizing the Japanese names, because it was "aping foreign customs!"

To conclude, then, we believe that the only proper spelling of the names Yedo, Osaka, Tai-kun, Shō-gun, Tai-fun,* Fuzi-yama, Nagasaki, Tokugawa, Hikomaro, etc., is as we have written them. By reference to the pages of that magnificent specimen of American scholarship—Hepburn's Japanese-English and English-Japanese Dictionary; Brown's and Ashton's Grammars, the translations of Mr. Ernest Saton, H. B. M. Interpreter of the Legation in Yedo, and "any other" competent scholar in Japanese, it will be seen that my views are not original, nor do they rest only "upon the authority of a correspondent of a New York newspaper writing from Japan."

Imperial College, Yedo, Nov. 15, 1872.

WILLIAM E. GRIFFIS.

CURRENT PUBLICATIONS.

DR. HART'S MANUAL OF ENGLISH LITERATURE⁽¹⁾ puts in a double claim to our attention. On the face of it, it is a "Text-Book for Schools and Colleges;" in the Preface, we are told that the book is "intended to serve [also] as a book of reference." To us, these two aims seem well-nigh incompatible. Our ideal text-book is not an *Omnium Gatherum*; our books of reference, the best and the bulkiest of them, not infrequently omit altogether the special points, if not the whole subject, on which we seek light. It would be difficult to teach beginners the science of the earth from an Encyclopædia of Geography. A map of Germany sufficiently full to answer all the questions of an intelligent adult would be but ill-adapted to the needs of the tyro. The in-

* See Webster's curious spelling TYPHOON, and more curious derivation. A perfect pure Chinese word, is TAI-FU, meaning "great wind." It is a word native to China, and used all over the far East, and was introduced into English from that quarter.

(1) A MANUAL OF ENGLISH LITERATURE: A Text-Book for Schools and Colleges. By John S. Hart, LL.D., Professor of Rhetoric and of the English Language and Literature in the College of New Jersey, and late Principal of the N. J. Normal School. Philadelphia: Eldridge & Brother.

finity of detail would almost obliterate the outlines and main points, which the school-boy has first to master. We know it was once customary in schools to assign a certain number of pages in the English Dictionary for recitation in class, but we always had our doubts as to the profit resulting from the labor so bestowed.

Were we to estimate this work from its plan and contents, we should judge that the secondary purpose named in the preface, had been not only the primary aim, but the only one. As a reference manual, the book has obvious merits, prominent among which is its cheapness. To those who cannot afford Allibone's *Dictionary of Authors*, it will be in some sort a substitute for that thesaurus of biographical and critical literary information. Its list of writers is extended, and its lists of writings, though sometimes unexpectedly meagre, generally include the most important titles. The only test of such a work is long continued use, yet let us try it with a few prominent names; and first, that of Sir Thomas More. The only work of his deemed worthy of mention is the *Utopia*, though Hallam calls his *Life of Edward V.* "the first example of good English language;" and Johnson finds it "necessary to give a specimen" in his History of the English Language, because, according to Ben Jonson, his "works were considered as models of pure and elegant style;" and even the Leipzig Collection of English Authors finds place for a sample of his idiomatic, sinewy English. Nor is any hint given that the *Utopia* in its English dress is not by Sir Thomas, but a version by another hand.

George Herbert we suppose to be the best known of the earlier religious poets. Copies of his poetical, if not of his complete, works are found on the shelves of many who own and read but few books. Of Herbert, a household name among our acquaintance, this is said: "He was the author of two *poems*, *The Temple*, and *The Country Parson*." Again, mention is made of his "two principal *poetical* works already named;" and after this—which could not possibly have been written by one who ever saw *The Country Parson*, or who knew what *The Temple* is—we have a criticism on his style, etc.!

And here is Doune, poet and divine, whom De Quincey styles "the first very eminent rhetorician in the English Literature," "combining what no other man has ever done—the last sublimation of dialectical subtlety and address with the most impassioned majesty;" whom Dryden calls "the greatest wit of our nation;" whose prose writings were so copiously annotated by Coleridge,—what of John Doune? absolutely nothing. His bare name does indeed occur in the notice of Isaak Walton, but no where else, so far as we can discover.

And the author of the *Argenis*, which Cowper pronounced "the most amusing romance ever written," and of which Coleridge speaks in such enthusiastic language, ["admired by great men of all ages."]—of John Barclay, satirist, romancer and political theorist, what sort of a sketch is given? We cannot find mention of him or of one of his works. True, the *Argenis* was composed in Latin, but so was the *Utopia*; like that, too, it has been repeatedly done into English. For either of the two authors last named we would be willing to exchange the five Diggeses and the three Sherleys here commemorated, of whose literary eminence we venture to say most of our readers now hear for the first time.

Of George Chapman we learn that his translation of Homer is "in the fourteen-syllable rhyming couplet,"—a statement which argues that the writer never opened Chapman's "*Odysseys*," which is composed in verse of ten syllables. Several of his translations, also, have no mention here, though we might infer the list to be complete. The only works of Richard Baxter mentioned by name, are precisely those which, being in everybody's hands (in *revised* and abridged editions), really needed no mention at all.

For a more modern example, we take John Hookham Frere, now twenty-six years dead,—according to Sir James Mackintosh, "*alone* among English translators," to mention no other claim of his to special recognition; but we seek for his name in vain. Max Müller is here said to "occupy the Chair of Modern Languages at Oxford." In the title pages of his books, he is styled Professor of Comparative Philology, etc.

Of course, such a work as this will exhibit both errors and omissions. Of course, too, where so abundant and varied

material is to be handled, no two men will exactly agree as to inclusions and omissions. A hasty comparison of the work with that of Allibone suggests the query, whether Mr. Hart would have made his *Manual* if Allibone had not first made his *Dictionary*. Justice to Mr. Hart requires us to add, however, that he has gathered and put in accessible form not a few literary facts and items which did not find a place in the larger work. His book gives evidence of much pains-taking industry.

As a text-book, we can commend neither the plan nor the execution of the work. It is too much like a bookseller's list. It includes too many names and passes too lightly over the representative authors. The student who should know it by heart (if such a thing were possible), would hardly have begun the study of English literature. The very comprehensiveness of the work, which constitutes its chief value as a volume for consultation, necessitates such condensation that nothing is seen at large and in its relations. For instance, it is of no great use for the student to know the exact amount of the hymns written by each of twenty "hymnists," when this is the extent of the information vouchsafed. As for the numerous names of recent and living authors, we agree with Mr. John Fiske, in his preface to the "*Class-Room Taine*," that "it is far less important to call the student's attention to [contemporary authors,] whom he will be sure to read for himself, than to give him the best insight that circumstances permit into Chaucer or Surrey, Spencer or Ben Jonson, whom he will very likely never read unless his curiosity is now keenly aroused." In a word, of all the "*English Literatures*" designed for schools that have yet come under our notice, this is, in our opinion, least suited to the uses of practical instruction.

It would not be easy to say which is, on the whole, the best Series of *Arithmetics* now before the public. Fortunately, there are three or four of such manifest excellence, that we do not feel called upon to pronounce a decision. The "*New Practical*,"⁽²⁾ just issued in Felter's Series, cer-

(2) FELTER'S NEW PRACTICAL ARITHMETIC, for Public and Private Schools. Prepared by Selim H. Peabody, A.M., Prof. of Physics and Civil Engineering in the Mass. Ag. Coll.; author of "*Elements of Astronomy*," etc. New York: Scribner, Armstrong & Co.

tainly challenges attention for many points of superiority over the now somewhat antiquated manuals through which we "ciphered" in our youth. Smith, Colburn, Adams (both the Old and the New), Daboll, Pike,—we had experience of them all, being chivalrously bent on seeking arithmetical adventures. If Greenleaf had only produced his "National" before our day, we imagine our passion for blind and intricate problems might have been satisfied! In after years, when our brightest pupils used to worry us with their knotty conundrums, half algebraic and half geometrical, yet pretending to belong wholly to arithmetic, we more than once lost all patience, and incontinently banished that unrivaled collection of puzzles beyond the school precincts. There may possibly be a better way of training ingenuous youth in the properties of numbers, than that of "sticking" them by enigmas, easy of solution to the adept in Algebra or Geometry, but dark as Erebus to him who has but lately condescended the table of Pythagoras. Perhaps, if grind-stones and hay-stacks must be divided in impossible ways, it will generally be as well to leave them in their entirety, until the higher mathematics shall have made the pupil acquainted with the properties of cones and circles. There is a royal and well-graded road by which to reach these heights; of what use to clamber up the precipices at such waste of precious strength and time?

The author of the volume before us we know to have been singularly successful as a mathematical instructor, and to possess that happy combination of skill and enthusiasm which excites a class to independent and honest work. On an examination of the treatise we find that decimals (to three places) are introduced with "Notation,"—a feature that renders possible the use of examples in U. S. Currency from the very first; that "Short" Division is properly left to follow "long;" that the successive steps of analysis in the various rules are exhibited with unusual clearness; that the framing of rules is not infrequently left to the pupil; that the obscure subject of "Repetends" is briefly but luminously explained, and that a large portion of the book is taken up with actual business transactions. Indeed, this last is the strong point of the treatise. In all matters per-

taining to Notes, Bonds, Banking, Average of Payments and the like, the best methods seem to be employed, and the clearest explanations given. As a Commercial Arithmetic, the book seems to us to have special claims to notice.

In the matter of Roots, we confess to a preference for the geometric method of illustration instead of the algebraic (to be repeated by and by) which we find here and in most recent treatises. In a Course of Mathematics, we should relegate Evolution (as Prof. Peabody does the Progressions) to Algebra, as well as other matters which seem to us to be improperly anticipated by Arithmetic. Some fifty pages are given to Mensuration and Mechanics, on account of "the exceeding practical importance of the subject," and in view of the fact that, in the case of the majority of children, what is not learned of these things at school, will not be learned at all.

Many academies and high schools devote some weeks or months, in the latter part of their English course, to the *study* of the English Poets. The exercise is as profitable as it is pleasant; well conducted, it should go far to induce or foster an intelligent taste for literature proper. For such class use, and as a guide to the individual student, there is nothing to be had superior, or in its special field equal, to Hales' "Larger English Poems."⁽³⁾ Entire productions of Spenser, Milton, Dryden, Pope, Wordsworth, Keats, etc., are presented, accompanied with notes philological, grammatical, biographical and historical,—in brief, with an abundant yet judicious critical apparatus at once learned, accurate and appreciative. We have heard that the book is winning a wide acceptance in the schools of Connecticut. It deserves it.

The "Class-Room Taine"⁽⁴⁾ will approve itself to teachers of English Literature as a judicious abridgment of a work which, with all its value, is yet in some respects but ill-suited to the wants of the ordinary class. The original

(3) *LARGER ENGLISH POEMS*, with Notes, Philological and Explanatory, and an Introduction on the Teaching of English. Chiefly for use in Schools. Edited by J. W. Hales, M.A., late Fellow of Christ's College, Cambridge. London and New York: Macmillan & Co. 1872.

(4) *HISTORY OF ENGLISH LITERATURE*, by H. A. Taine: Abridged and Edited with Chronological Table, Notes and Index, by John Fiske, Assistant Librarian and late Lecturer on Philosophy in Harvard University. New York: Holt & Williams. 1872.

is too "bulky ; too free in its illustrative quotations from the earlier literature ;" too largely given to the exposition of the author's pet theory of art and letters. As a Dictionary of English Authors and their writings, other works exhibit more completeness ; but in point of proportion, the relative prominence given to the various authors treated, as also in the qualities of freshness, vivacity and suggestiveness, no other treatise approaches it. Mr. Fiske has done well, we think, in omitting Taine's criticisms on the productions of contemporary writers. These the student can hardly help gaining some knowledge of ; while the chances are, that if he does not get an introduction to Chaucer and Spenser and their more immediate successors before the ordinary curriculum is ended, he will never come to know them at all. Mr. Fiske's own notes are few ; but the Chronological Table which he has added, of authors and works from Cædmon to Byron, filling twenty-eight pages, is alone worth to the student one half the price of the volume.

Taine's treatment of John Milton, we must add, is far from satisfactory ; but more sympathetic estimates are numerous and accessible enough. In fact, the reader needs all the time to remember that this is a Frenchman's estimate of English literature ; and a philosophical history of English thought and life, illustrated from English letters, rather than a full exhibition of the treasures of the English tongue. This is not said by way of detraction. We sadly, but without hesitation, admit that no one whose mother-speech was English, has begun to do for the historical development of English literature proper, so much as this foreigner has done for us. It is humiliating to be obliged to admit that, for the best English Grammar, the best treatise on the language before the time of Chaucer, and the best comprehensive survey of the whole vast field of our literature, we are indebted to other than English sources ; but so it is.

"Holmes' Sixth Reader" (by the University Publication Co.) is the last of a series. This volume is intended for use in High Schools and Seminaries. It contains extracts from the best American and English authors, over one hundred of whom have been laid under contribution. The selections

evinced much taste ; prose and poetry being agreeably intermingled. An occasional illustration adds to the interest of the book.

MESSRS. THOMPSON, BIGELOW & BROWN have published an "Elementary Geometry and Trigonometry," by William F. Bradbury, A.M. It is concise, and yet the author claims to have omitted no important proposition. The clearness and brevity of the definitions is a good feature of the work. Each book of the Geometry is followed by Practical Questions and Exercises.

"Oxford's Junior Speaker" (E. H. BUTLER & Co.) is a collection of pieces and dialogues, old and new, designed for the use of boys and girls. There is a freshness about it quite delightful, and it is profusely illustrated with engravings.

A want long felt has been supplied by the "Manual of Commerce" (BILL, NICHOLS & Co). The idea of the book is good. It gives the principal articles of commerce, their uses, and some interesting information concerning them. In his desire to be explicit, the author has brought in much which might have been omitted with advantage. It is undoubtedly true that different qualities of flour command different prices, and it is also a fact that, although sugar is highly nutritious it is not usually eaten by itself, but it is not worth while to insert such things in a text-book and thus increase its bulk.

"Force," by Jacob Abbott, is the fourth volume of a series—"Science for the Young" (Messrs. HARPER & BROTHERS). The object is to teach scientific principles in an attractive way. To accomplish this the narrative form is employed.

"The Miracles of Faith" (DODD & MEAD) is a little gem in contents and form. We have received from the same publishers "For Conscience Sake," "Elsie's Girlhood," and the "Lillingstones of Lillingstone."

THE ADAMS, BLACKMER & LYON PUBLISHING COMPANY have published a good Christmas Story—"Mr. Blake's Walking Stick"—by Edward Eggleston.

"Every Man his own Painter" (SAMUEL R. WELLS) does not pretend to make every man a *painter*, but it gives many useful hints to those who wish to study the subject and try its practice as amateurs.

We have received the "Note-Taker," for October and November, a treatise on short-hand writing.

MR. DARWIN'S forthcoming work on "Expression in Man and Animals" bids fair to be of a more popular character than any of his other publications.

Among new scientific books of interest is the late Prof. DE MORGAN'S "Budget of Paradoxes."

The first number of the "New York State Educational Journal" has been received. The field which it proposes to itself is stated in the opening editorial, from which we quote the following :

"In the field of education, not only in this State but in general, great questions are constantly presenting themselves, which have not as yet been definitely settled. Some of these require immediate action, while all of them are of vital interest to our educational welfare. These questions must be settled soon, and it is of the highest importance that they be discussed freely and fairly.

"Among these questions may be mentioned, improvements in methods of instruction, what are they and how far may they be carried?—what action is necessary to make teaching rank with the professions, and not as an occupation?—what is the best and most practical way of giving professional instruction to common school teachers?—how best elevate the standard of excellence among teachers themselves?—how prevent pupils from leaving school prematurely?—how best secure universal education?—how much can be gained by kindergarten instruction, where should it commence and how be conducted?—what are the proper relations of the various branches of our educational system, and how can they be made to harmonize?—how far is it best to introduce technical instruction, or, in other words, build up *craft-schools*?—to what extent can object teaching be used to advantage?—what is the proper use of books in the school-room?—and many others which are of importance to the teacher individually. Besides these we have those general principles of educational policy, such as the higher education of women—the co-education of the sexes in high schools and colleges—religious instruction in public schools—compulsory attendance of pupils—national superintendence of education, and the like, which are yet unsettled questions."

The present number of the "Educational Journal" contains the Reports of the N. Y. State Teachers' Association, the University Convocation, and the National Educational Association, to the exclusion of other matter. Next month we are promised editorials, local news, etc. We heartily welcome this new Journal and wish it a "longer lease of life than its two elder brothers, over whose infant graves the grass has been growing for years."

MISCELLANEA.

A DESPATCH from London of Dec. 2d, announces the death of Mrs. Mary Fairfax Somerville, the mathematician and astronomer. She was born near Edinburg, about 1795. In 1835 she became a member of the Royal Astronomical Society of London. She prepared for the Library of Useful Knowledge an abridgment of Laplace's *Mécanique Céleste*, which was published under the title *Mechanism of the Heavens* (London, 1831). In 1834 she published "Connection between the Physical Sciences," which reached its eighth edition, and in 1848, a *Physical Geography*, in two volumes, which met with great success.

THE Bureau of Education have sent blanks to all the jails, prisons and penitentiaries in the United States, asking for statistical information in regard to education and crime, which will be worked up into an interesting volume to be published by the Bureau for general information.

AT Heidelberg it is said there is no language, ancient or modern, which has not a Professor competent to teach it.

A HISTORY of Education in Iowa is to be published. A committee of three, appointed by the Iowa teachers, have the matter in charge.

CHICAGO is to have a new Educational Monthly. The title will be "The Chicago Teacher." Its aim will be to improve the quality of reading matter furnished by other journals of this class.

THE GIRLS OF OUR BEAUTIFUL LAND.

AIR AND CHORUS.

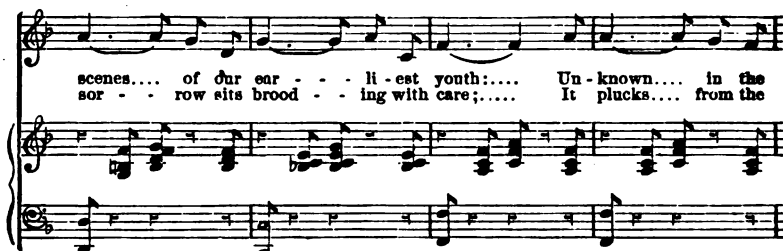
Words by DR. W. J. WETMORE.

Music by DR. U. C. BURNAP.

Andante Grazioso.



1. There's a spir - - - it that ten - - - der - ly falls..... O'er the
2. It.... lights..... up the drea - - - ry a - bode,.... Where



scenes.... of our ear - - li - est youth:.... Un - known.... in the
sor - - row sits brood - - ing with care;.... It plucks.... from the

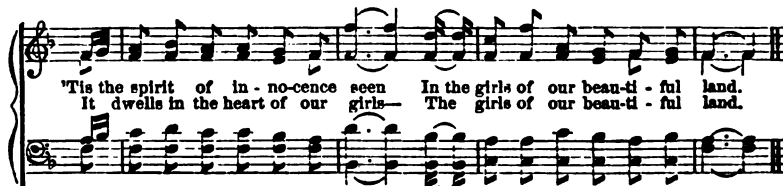


dim..... fu - ture years— The spir - - it of friend - ship and truth.
bo - - som a thorn, And plants... flowers of hap - pi-ness there.

Chorus.



'Tis seen in the cot - tage and hall,.... It meets us on ev - ery hand.
That spir - it seems al - most di - vine,.... Like an angel on ev - ery hand;



'Tis the spirit of in - no - cence seen In the girls of our beau - ti - ful land.
It dwells in the heart of our girls— The girls of our beau - ti - ful land.

AMERICAN EDUCATIONAL MONTHLY.

FEBRUARY, 1873.

SHALL OUR GIRLS STUDY THE CLASSICS?

IN the [minority] report of the Committee appointed to consider the subject of the co-education of the sexes in Harvard College, by James Freeman Clarke, the following passage occurs: "This method is particularly applicable to Harvard University, because the system of elective study is already so largely adopted therein. In colleges where one course of study is the rule for all, that would necessarily be adapted to the male students, and might not be so suitable for women. But in Harvard they would have such large liberty of choice that they might easily select a course suitable for them."

It has been noted as a significant fact, that "out west," where the girls go to college, they are in many, perhaps in a majority of cases, taking the "scientific," or the "modern," or some partial course of study, and leaving out the Latin and the Greek; thus indicating, the *Independent* remarks, "if not what the young women need, what they think they need."

With all respect to the *Independent*, I think it indicates precisely neither the one nor the other, but rather the sentiment of the country with regard to the education of women; and that this action of the girls, as far as it is referable to them, may be explained by reasons quite other than their own preferences.

In the first place, girls are not generally fitted to enter the college classical course. Latin is seldom studied to any extent by those not expecting to go to college, and the little amount of Greek necessary to enter upon a respectable university course is rarely found in the curriculum of a young ladies' school. So, with the college doors wide open and other things favorable, we must wait at least three years for the girls to get started in the classics.

But most of those who have come to realize the necessity of more extended culture, are past the age for attending school, and can only regret that these opportunities did not come to them earlier in life; or, they are surrounded by circumstances that would prevent their spending seven or eight years longer in school, while it might be possible for them to spend four years longer there; and if we look to the younger ones, those just entering the High or "Select" school to begin the proper preparation, we find that the sentiment of the parents is opposed to an advanced education for their daughters. The same spirit that takes our boys from the academies and puts them into the counting-rooms; that takes our young children from their natural sports and puts them into factories; that takes our half-grown misses from—anywhere, and puts them into the teacher's desk, will heap obstacles almost insurmountable in the way of our ambitious girl students, unless it can be demonstrated by easy logic, that for every hour spent in the classic hall there will be a direct return in money or position. "What good?" is the question oftenest asked the teacher concerning his course of study; and the fatal thing about it is that the best things are not considered good at all by those who hold in their hands the keys to the child's future life.

And so, I think, our western girls have made a compromise between a full college course and none at all;—some of them, perhaps, believing with their friends that any university study is a work of supererogation for a woman, and ought to entitle her to a high place among those who make "getting on" the main business of life. Many of them, while possessing a genuine respect for culture, have, true to that principle of economy which, for obvious reasons, most wo-

men set in high esteem, chosen the shorter and more modern course, as requiring a less expenditure of time and money than the full course, and as being more readily convertible, when finished, into the good things, perhaps into the necessities of life.

Let me not be understood to intimate that it is merely for the selfish love of gain that women thus abridge their term of preparation for the work of life. I have watched the ways of the world in school matters too many years not to know that it is sometimes in obedience to the highest moral sentiments, that young women cheat themselves of the best things in life,—of the things, too, that were meant for them and are good for them.

Here is an illustration of the way such matters are managed. A young girl, thoughtful, fond of study, has finished a high-school course, and is ambitious of further means of culture. A neighboring university is open to girls, and she resolves to avail herself of its advantages. At the very first step she meets with discouragement, if not downright opposition, from her parents, who want her services or her society. "You have been to school as much as other girls," they say, and "what good will so much learning do you?" "It is time you were earning something for your living;" or, "we are lonely and dull without you; the boys *will* go away, but we mean to keep our girls." She tries to make them think that the time will soon pass, and that she will be in a condition to benefit them more when she has carried out her plans, than she possibly can do in her present state, feeling so sensibly the need of a larger and more general discipline to make what she has already acquired available. But they are not convinced. "In a little while she will be married," they say, "and then her fine education will be lost; we will keep her while we can."

Her brother, who perhaps owes it directly to her enthusiasm that he is in college, is not now to be relied upon. It is not a common thing for girls to attend the University, and the honest boy shrinks from the notoriety that might come to his sister. He tells her that the "fellows" are rough, and he is afraid they will think her "strong-minded;" he is sure she could never "keep up" in Greek, and then

those "tre-men-dous mathematics!" they would "entirely break her head open," they "almost" break his. If she reminds him that she used to help him in Arithmetic and Algebra, he says, "That's another thing. Algebra is nothing to Trig,—besides, girls always do well at first, but they don't hold out, you know."

Her young lady friends who have not the same aspirations, are properly "surprised" that she should be so "unfeminine;" and last, I do not say least, comes a young man of society, a bank clerk perhaps, some sort of a stupid, genteel prig, who looks grandly down at her, and tells her meltingly that she is good enough for him as she is; that he is not sure but he likes her better now than he shall when she has weak eyes, an abstracted air, wears a green dress, and has an ink blot on her middle finger. A serious consideration surely, but sometimes, if the girl be young and susceptible, a moving one; and everybody remembers the fatal consequences of that "last straw."

Perhaps she goes to her pastor, as the most cultivated, and at the same time conscientious person whose advice she has a right to seek, and lays the whole matter before him. More than possibly, man and minister as he is, he reads her a lesson on "woman's sphere;" reminds her of her filial duties; tells her that it is well to be learned, but better to be dutiful; better for a woman to possess the domestic virtues than to read Greek,—as if there were any antagonism between Greek and the domestic virtues!—finishing up with the (to woman) seductive suggestion that by the present self-denial, the sacrifice of her highest hopes, even of the object she has set for herself in life—by this sort of penance (he does not call it so), she is perhaps doing her duty and laying up great treasure in heaven. It is possible for one person in a thousand, one of remarkable foresight and independence of character, fruitful of expedients, and skilled in ways and means, to decide what is best and right for herself to do, and to succeed in doing it, even when she has to overcome a world of adverse circumstances; but the case we have been considering is not an extraordinary one, and ends, if not in giving up school-days altogether, in a compromise,—the poor girl hurrying through a partial

course that she may the sooner devote herself to her friends and her "duty."

It may be thought that this is an exceptional case; for neither girls nor boys are generally so anxious about an advanced course of study, a majority always preferring to leave school early in order to enter upon business or society. It is true that the majority of boys with the world in their favor do not go to college; and that the universities are founded, endowed, carried on for the benefit of an exceptional class (so far as immediate attendance upon them is concerned),—a very small minority of the masculine world. I suppose the majority of girls do not wish to go to college, and that only a small minority of them will ever be persuaded to do so; but of this exceptional class, I believe that the illustration I have given, which is "founded upon facts," is a characteristic one.

Whether the decision to take an entire college course, a partial one, or none at all, were the wisest to make under such circumstances as I have described, I do not pretend to say. This I believe, that it were better for an individual not to know the alphabet of his own language, than to sacrifice any intelligent convictions of duty in order to learn it; and I say this, knowing well that some of the most foolish, as well as the most atrocious acts have been performed in obedience to convictions of duty;—perhaps, however, not "intelligent" convictions. Persons of weak wills and obliging dispositions sometimes mistake the pressure of circumstances for a conviction of duty. Women, who are brought up systematically to self-denial, are apt to think the painful path the appointed one for them to take.

"Jeanie" in the ballad felt that she *must* marry "Auld Robin Grey" because he "came a courtin'" her, and her parents "urged her sair," and so made more lives miserable than she had hoped to make happy.

We look to our professional thinkers, our editors, clergymen, teachers, to keep the atmosphere so clear of ignorance, superstition, prejudice, that no class of our young people shall be weighed down by its foulness; forced to live low by inability to rise above untoward circumstances,—an unnatural inability, brought on by breathing-in falsehood, sick-

ly sentimentalism, superstition, nonsense, from earliest childhood.

Shall not our teachers—all those who make it a business to think for others, find a large part of their work here?

The *exceptional* girl, if one pleases, with a thoughtful turn of mind, a fondness for study, who feels as the Brooklyn preacher says, "called to become educated," should find in the country Academy, the village High School, or in any institution worthy of public patronage, judicious teachers, who would give her right notions of education, guide her in the choice of present studies, and aid her in defining plans for the future. The teacher should do more; he should convince her parents of the uses and benefits of scholastic drill; convince them that there are wastes besides that of money, which they can ill afford; that there are better results to be sought after than temporal gain, and that there are better things, even for girls, than to know how to "appear" in society, and to "keep a house" in the orthodox fashion.

This is the work of the teacher, but not of the teacher alone; the early training, the education of children and young people, should, it seems to me, occupy a large space of the pastor's thoughts. The salvation of the world is his professed business, and where can he better begin than with young children, unless indeed with the parents of young children? It is not enough that he preach repentance in general terms; he must descend to particulars and instruct his people on specific things, on the conduct of life. He is to think for his people. Let him see to it that his preaching and teaching is not a mere presentation of theological truisms.

"Does your minister never preach sermons like that?" asked a gentleman of a young friend who was going into raptures over a live sermon concerning matters in which he was interested. "No, never!" exclaimed the boy in a tone of disgust, "he never preaches anything but 'Christ and Him crucified!'" I am sorry for the irreverence; the boy did not know that he had just listened to a discourse on that theme, the best of his whole life.

What has all this to do with the classics? Much, I think.

The law of gravitation holds the planets in their places and the great stars; but it directs no less the movement of a falling apple or chestnut.

When we come to learn what are the best rewards in this life, the things most worth striving after, we shall adapt the means to the end. When we come to know that all people of the earth are of one flesh, we shall believe what was told us eighteen hundred years ago, that there is a "better part" for women than "much serving."

Missionaries are fond of telling us what Christianity has done for the "sisters." The "sisters" reverently acknowledge its blessings, and patiently wait for further manifestations of the same. Less heathens than we once were, we are not saints yet. When we are farther on to sainthood, we shall have better schools no doubt: most assuredly will one class not monopolize all the best ones. And when the first principles of Christianity prevail, and the girls have a chance at the best schools, there will not be an opinion, a sentiment, a prejudice to follow them there, and hold them back from the best things taught in these schools.

Are Latin and Greek the best things of a college course? If the judgment of the scholastic world in this matter is worth anything, we must believe that they are among the best things. The late discussion upon the comparative value of the classics and the sciences, and also upon the positive value or worthlessness of the classics, engaged our ablest teachers and most thoughtful men. What has been the result? The expulsion of Latin and Greek from the schools? On the contrary they are retained, and not only retained, but they hold the place of honor in our colleges. Special preëminence is given to them now as formerly, and scholars, even the professed advocates of science, tell us that after a careful examination of their faith and practice they are "all (or nearly all) agreed that Latin and Greek should remain as the solid basis of a liberal education."

Is the opinion of men who have given special attention to education, as a study, of no importance to one who is seeking to become educated?

It is not the object of this paper to notice the general benefits of a knowledge of Latin, or to examine the reasons

why "the study of the classical languages is universally preferred to any other as a means of discipline." I wish to call attention to the fact, and to ask the girls if it has no significance to them. I wish to suggest to the girls who hope to become educated, that it might be well for them to look up the reasons why the study of Latin and Greek is so generally made the "basis of a liberal education," and then to consider whether they can afford to do without it.

Some of them are learning music. They know that it is the opinion of professed masters of the "divine art," that a long practice of "exercises," a tiresome drill on scales and chords, which appears to have as little connection with music as to the uninstructed Latin seems to have with education, should lay the foundation of musical skill. They know, too, that there are instructors who begin with "tunes," simple "pieces," songs, leaving out the "exercise" work, and fitting (?) a pupil to play for company in six months! But the girls of talent, of wealth, those with intelligent parents, who wish to learn music, heed the professional opinion in spite of the expense of time, personal ease and money, and submit to the long and painful drill, for they know that this is the only way to get perfect command of the piano; and that at the end of their apprenticeship, instead of knowing just a dozen pieces of music, they will have learned "the method of all." And the critics and the lovers of music tell us that those who have had the benefit of this drill of years, play the special pieces of the superficial performer with more depth and richness than he, and with a masterly touch that distinguishes them at once from those who have learned "practically,"—that is, just the pieces they wanted to play in after life.

Well, the savans and critics and connoisseurs,—those who ought to know,—tell us some such things about those who have respected the professional opinion in educational matters, and submitted to the orthodox training of the schools.

There are, it seems to me, one or two reasons why the study of ancient languages is peculiarly fitting for girls. "The study of the classics," they tell us, "more than any other, gives general culture." It is the "most efficient instrument of discipline," for it "exercises and strengthens

the memory," "cultivates the judgment," "educates the analytical faculty," "develops the reason," "cultivates the imagination," "gives precision to and cultivates the faculty of language." It is a good part of the "exercise" drill that should lay the foundation of a liberal education.

Men with trades and professions, definite business in view, call loudly for specific training. They can not afford to wait; they have little time, and prefer, either wisely or unwisely, to learn the duties of their especial work, rather than to acquire ability to do work of any kind. Women without trades, professions, businesses, who nevertheless do not expect to be idle, cannot know at the outset what are to be the occupations of their life, and could not, if they would, prepare especially for them. Marriage makes a radical change in the circumstances of a woman's life. Nine women out of ten marry, but who shall tell one in her teens whether she is to be the one out of the ten or one of the nine?

The work of each one who marries depends again to a great extent upon her choice of a husband; and as this choice depends upon nothing in particular, is governed by no known law, but is like the wind which bloweth where it listeth, and we hear the sound thereof, but cannot tell whence it cometh or whither it goeth, we cannot predict in a single instance whether the girl in school is to spend her life in elegant leisure, in the training of future generations, in the cares of a family, "taking in" sewing, giving music lessons, editing newspapers, writing stories, keeping books, binding shoes, attending to the duties of society, selling books and stationery, keeping school, doing fancy work or millinery, or in various other ways, or in half-a-dozen of these combined. The average American woman in the "cares of a family" unites a variety of distinct occupations, and needs powers well disciplined to carry them all on together. Her actual work often reaches beyond the domestic circle; she needs always to have her wits about her, and to be prepared to meet any emergency.

If a woman's education is to be at all "practical," it must give her the broadest culture possible: accuracy, judgment, clear-sightedness, the power to think instantaneously, and

to act at all times advantageously. If a proper drill in the classics will conduce to this end ; if it will do anything toward it ; if it will do for her one-half that educators claim it to be its especial province to do, by all means she should have it.

Again, boys often tell us that they have not time to spend with "dead languages." They admit the advantage of such studies, but pass them by in order to shorten school days ; rich and poor equally intent upon "getting on," believing that the sooner they are at work in a field, a shop, a dingy office, money-making, the better they are fulfilling the end and object of their being.

Among the girls whom no such sentiment urges into business, there is a large class comparatively at leisure. Why should not these explore the classic fields of literature, and taste all the sweets of "liberal" and expensive culture ?

School days are finished so soon, and while the mind is still immature there comes a period of waiting. Society, which may mean so much, has little significance now, and we find girls at this restless, eager, educating age, growing *ennuyées*, and resorting to expedients to pass away the time, expedients which, their dress and amusements often bear vulgar witness, are not always suggested by a refined mind or a cultivated taste.

If these girls who have time were kept a little longer at their books ; if they made a little more thorough work of studies which are considered "purely disciplinary," besides gaining "an understanding exercised in the principles of sound thinking," a few might break through the trying hedge of declensions and conjugations, roots and endings, and find themselves in another world stately and fair ; a world of real people, with lives worth studying, and characters as full of romance and sentiment and philosophy as the heroes of their dreams. Once possessed of the key, they might explore these real regions of the long ago with something of the same mysterious delight with which they went into the enchanted domains of Blue Beard, and the Fairies, in childhood ; and then—women are intensely practical, it is said—they would be sure to bring back trophies ;—

besides lessons of wisdom, specimens of fine art, literary "antiques" for the benefit of their friends.

Half a dozen ladies of leisure, in even a large community, with a genuine enthusiasm for literature; a scope broad enough to take in the best things of ancient as well as modern lore; and all those included in the list St. Paul recommends us to "think on," might do more to elevate the tone of society, and teach a just estimate of the value of things set before us, than several series of sermons on "fashionable follies," or a whole library of books and essays on the "importance of education," and the "sphere of woman."

It is for the interest of every individual that there be such an upper class in his neighborhood,—a cultivated, refined and intelligent society, which shall keep the air pure, and hold up a real standard of excellence in his sight that may influence him to move in the right direction, when he begins to think of moving at all.

And women who have time to think, ought to originate and foster such a society in every place where it is not. Ladies of leisure, who shall add to native good sense and what is called "feminine tact," the power that comes of education will be able to do this.

We look to the colleges to make literary culture popular, as well as possible, for women. We do not ask them to lower their standard in any degree for our accommodation. Down deep in our hearts we shall feel indignant if they offer us a separate course which does not include all the things they deem essential to the proper training of the intellect.

Neither do we want a medley of subjects held up for the girls from which to choose a course "suitable to themselves;" for girls are but girls, and the world favors superficiality in them. And so, in the present state of popular sentiment, we are not sorry that Harvard, with her elective course, did not see fit to open her doors to young women.

We are glad, too—we have not ceased to remember gratefully—that the University of Vermont, a New England college, noted for its high-toned culture, and for its intelli-

gent conservatism in educational matters, has asked the girls to come in and share its best gifts.

Already the good results are becoming manifest. Besides the names already on its lists, I hear of girls here and there in neighboring States who are beginning Latin and Greek at the preparatory schools, and looking hopefully towards Burlington.

For the sake of going to college, for the sake of the name of being educated, and for the honors implied in an honest "M. A.," many a boy has been helped to a real education. Girls, for whom such honors were not available, have been set to learn "practical" things, *e. g.*, book-keeping, French verbs, piano playing, the art of dressing and "appearing."

It is yet to be seen whether the schools can give us no higher type of womanhood than we have hitherto received from them. Our women of culture have become so by their genius, by the education of circumstances, by the efforts of individuals, rather than by the steady, earnest training of professional teachers.

Our wealthy men spend thousands upon their daughters' education; to what purpose? To make the upstart proprietors of "Ladies' Seminaries" rich, and the daughters—anything but wise.

I beg the pardon of every honest and capable teacher of young women; I would their name were "Legion"—I fear it is anything but that. The teaching in the best ladies' schools, with a few exceptions, will not compare favorably with the teaching in our ordinary high-schools. Certainly the price is no indication of the quality. This is the testimony of intelligent persons who have interested themselves to know.

Have our colleges no responsibility in this matter? They make public sentiment to a great extent in respect to education. Does any one think they do not? When he sees all the little rills forming into rivers and emptying into the sea, does he fancy that the springs and summer showers fill up the ocean?

If the water should be removed from its vast bed, carried altogether out of the planet, I think he would find that the springs and summer showers, nay, even the rivers would

fail ; and be convinced that it needs all that vast reservoir of waters to keep the thirsty earth supplied.

So our little institutions of learning,—primary, select, and high-schools,—that feed the college, depend upon it again for support and strength, even for existence. I wish these great sources might nowhere fail us. I wish they would imitate more nearly the Creator of the sea, who sends his rain impartially upon the just and upon the unjust.

MRS. F. K. KYLE.

"HAD RATHER."

THERE is perhaps no better established form of speech in the language than this. It is certainly one of the oldest and best authorized. It occurs in the earliest writings of the language, and may be traced thence through the successive stages of English literature to the present day.

It has become popular of late years to condemn this form of speech, and suggest another instead. The following, from a comparatively recent and extensively used school grammar, will serve as a sample of the criticisms offered concerning it. "‘I had as lief cross the ocean as not.’ *Had cross* is evidently a corruption ; for the auxiliary *had* should be combined with the participle *crossed*, and not the root of the verb *cross*. The meaning, as well as the correct form of this expression, is ‘I *would* as lief cross,’ etc. Parse, therefore, as follows : *Had cross* is a corruption for *would cross*, potential mood, imperfect tense, etc. *I had* may have come thus to be confounded with *I would* in consequence of the frequent abbreviation of both expressions into *I’d*." This is plausible, and may satisfy those who know no better. But it is ridiculously erroneous and unworthy of any writer on grammar.

The latest instance of this kind of criticism that we have seen has just appeared in the January number of the *Galaxy*. Richard Grant White, in an article entitled "Language according to Sample," says : "Nothing, among the few enduring certainties of language, is more certain than that *had*

expresses perfected and past possession. How, then, consistently with reason, and with its constant and universally accepted meaning in every other connection, can it be used to express future action? A perception of this incongruity and a consequent uneasiness as to the use of these phrases is [*sic*] becoming common, and it is safe to say that they will, ere long, begin to be dropped in favor of a more logical and self-consistent phraseology. *Had rather* will probably yield to *would rather*, and *had better* to *might better*." We confess we are not surprised at finding an utterance like this coming from one who professes to regard the English language as a "grammarless tongue." At the same time, it indicates that he is not altogether convinced of its grammarlessness. He wants "a more logical and self-consistent" phrase than *had rather*. Why? Because of what seems to him to be an "incongruity," a want of grammatical propriety in its use. And yet we are surprised that one who, as a grammatical critic, ought to be thoroughly acquainted not only with the principles of the language, but with the true character of apparently anomalous though well established forms which he undertakes to criticise, should indulge in such crude and inconsiderate speculations.

The whole difficulty as to the propriety of saying "had rather," "had better," "had as lief," etc., arises from regarding *had* as an "auxiliary verb" in the common acceptance of that term. In a certain sense, no doubt, it is an auxiliary. *Dare*, in the sentence "I dare do it," and *is said*, in the sentence "Hanno is said to have reached the shores of Arabia," may be called auxiliary verbs. So *had*, when used in the forms under consideration, may be said to be an auxiliary; that is, it aids in complementing the phraseology which embodies the predicate of the sentence. But this is a wider sense than that attached to the grammatical term "an auxiliary verb," which *had* in this connection is generally regarded as being. Hence, because we may not with propriety say "had go," "had leave," "had be," "had cross," these would-be "logical" critics and teachers would have us avoid saying, with Sir Thomas More, "He had leuer go some other waye;" or with Addison, "Had we

not better leave this Utica?" or with Henry Clay, "I had rather be right than be president;" or with Junius, "I had as lief be a Scotchman;" or with ninety-nine out of a hundred English-speaking Americans, "I had as lief cross the ocean as not." The meaning, in these instances, may be as well expressed by *would* or *might* or by *had*; but this is no proof that *had* is an "auxiliary," and hence illogically and inconsistently used. In the sentence, "I found that I had to do it," who ever considers *had* as an "auxiliary?" And yet we can say instead, "I found that I *must* do it." In like manner, "You *ought* to go," is equivalent in meaning to "You *should* go;" and "He that was, and is, and *is* to come," equivalent to "He that was, and is, and *will* come." This is no proof, however, that *ought* and *is* before an infinitive, any more than *had* in the previous example, are auxiliary verbs commonly so called.

Having once supposed that *had* is an auxiliary, and that as such it cannot properly be used in connection with the root-form of another verb, the next step was to account for its introduction and misuse. Hence it was pronounced a "corruption." This, however, is a mere assumption, based upon the fact that *would* sometimes may be made to supply the place of *had* with seemingly better grammatical grace. And this assumption is countenanced by the fact that, in common parlance, both *had* and *would* are frequently pronounced as 'd. To one who has not inquired into the matter, this assumption, as we have already said, has every appearance of truth. But it is as erroneous as it is groundless. The fact that, in sentences like these, "You had better try to sleep," "We had better change our quarters," *would* cannot be substituted for *had*, ought to have awakened a doubt as to the correctness of this theory, and to have led to further investigation.

Such investigation might have shown that neither *would*, nor even *might*, is always equivalent to *had* in this connection. In very many cases, perhaps generally, it is. But take examples like the following: 1. "The most meddlesome of tattling old women knows when she may venture to repeat Mrs. Grundy's opinion, and when she had better not."—*Boyd's Leisure Hours*. Here *had better not* is equiva-

lent to *ought not* or *should not*. Neither *would* nor *might*, nor even *should*, will fill the place of *had* alone, and express the meaning. 2. "He had better not make any innovation in it."—*Prescott*. Again, neither *might* nor *would* could be substituted for *had*. *Would do* possibly might be; and yet *had* excels that in brevity and expressiveness. 3. "A lesson which requires so much time to learn, had need be early begun with."—*Government of the Tongue*. (*Need* here is an adverb, corresponding to *better* in the foregoing examples.) *Had need* is equivalent to *ought* or *should*. So in the following examples: "Thou hadst need [shouldst] send for more money."—*Twelfth Night*, ii., 3. And again:

"We had need [should] pray,
And heartily, for our deliverance,
Or this imperious man will work us all
From princes into pages."—*Henry VIII.* ii., 2.

Neither *would* nor *might* would answer here. Even *should* is not equivalent to *had*, but to *had need*. So in other instances. But these are sufficient to show that *had* does not always find an equivalent in *would* or *might*, and can hardly be expected to be supplanted by them.

In this connection it may be interesting to some to note the following exceptional example, differing from the preceding both in use of *had* and in the form of the verb that follows it, but still presenting an instance of the correct use of *had rather*:

"You shall wish the fiery Dane
Had rather been your guest again."—*Marmion*, II., xxxi.

Here *had*, of course, is equivalent to *might have*. But *had* the poet, under the idea that *had rather* should be *would rather*, written

"You shall wish the fiery Dane
Would rather been your guest again;"

what "a logical and self-consistent phraseology" we should have had in "*would rather been!*" But we are thankful that Sir Walter's instincts were more trustworthy than some people's generalizations are.

Had, says Mr. White, always "expresses perfected and past possession." Let us see. "I have *had* this cold for

more than a week." Here present possession is evidently implied. But it would be the sheerest nonsense to say that that possession is the present possession of a "perfected and past possession." The cold is the thing spoken of as possessed, and *have had* predicates its present as well as past existence, a possession begun in the past, but still continuing, unperfected. Without the *have*, it is true, the present continuance of that possession would not be expressed. But this is not the point. What we need to see is that, if that possession were a "perfected, past" possession, it could not be brought up into present time by the coupling with *had* of *have* or any other word. The fact that such a combination as *have had* can be made, and used to denote a possession still continuing, proves all that we claim; namely, that *had* does not of necessity, "constantly and universally" denote "perfected, past possession," a possession not consistent with or admissible in present time.

Again: take the words, "O that those lips had language!" Cowper of course means, Would that they *now had* language, and could speak to me! *Had* does not express a perfected or even a past possession, for the lips referred to never had spoken. It merely assumes a *present non-possession*, and helps to express the wish that the power of speech were possessed. How, then, consistently with facts, can Mr. White say that "nothing is more certain than that *had* expresses perfected and past possession," and that this is "its constant and universally accepted meaning in every other connection" than in the phrases *had rather*, *had as lief*, etc.? Mr. White may yet find the language to be less "grammarless" than he has imagined. If there is a "grammarless" language, it is not the English, however much some may suppose it to be.

Mr. White, moreover, thinks that *had* can not consistently be used to express future action." We suppose he means to say "to express futurity," for *had* does not ordinarily express "action." Commonly, futurity is not expressed in English by a single word. What is called the "future tense" of verbs is simply a combination of two present-tense forms. Thus, "shall go" as truly consists of two presents as "am to go." A verb in the present that conveys the idea

of temporal proclivity or of reaching forward in time, when combined with another verb in the present, necessarily expresses more or less the idea of futurity ; as, “ I may go ; ” “ You need not go ; ” “ I hope to be present ; ” “ You ought to give your consent ; ” “ He is to come.” Even the past forms of some verbs, such as *could*, *might*, *should*, *would*, may be used with certain presents to denote futurity : as, “ I would go were I you ; ” “ He could come if he wished ; ” “ One might, after repeated trials, succeed.” Where, then, the inconsistency or departure from English usage in employing *had*, if one wishes, to aid him in expressing futurity ? Where the objection to saying, “ I had rather be right than be president ? ”

It is replied, “ *Had be* is not a logical form ; it is not legitimate ; it is not English ; it cannot be parsed ! ” Of course not ! But *had be* is not the form before us ; it is “ *had rather be*,” “ *had better be*,” “ *had as lief be*,” etc. ; and this is legitimate, idiomatic English, as logically correct as any other expression in the language. To see this, we need to consider the following points :

(a.) *Have* is frequently used to denote, sometimes a wish or willingness, as “ Deal with others as you would *have* others deal with you ; ” and sometimes compulsion or obligation, as “ I *had* to inquire my way.” When joined with *rather*, *sooner*, *as lief*, *as soon*, *had* generally expresses a wish, a preference or choice. Joined with *as well*, *better*, *best*, *need*, it usually denotes an obligation.

(b.) *Had* in these phrases, instead of being “ an auxiliary,” as generally supposed, plays, in connection with the accompanying adverb, the part of what is commonly, though perhaps improperly, called a “ principal ” verb. Thus, “ I *had rather* be a door-keeper ” is equivalent to “ I *should prefer* to be a door-keeper.” Formerly the *to* of the subjoined infinitive was sometimes expressed after the qualifying adverb ; as, “ I had rather *to* adopt a child,” etc.—*Othello*, i., 3. “ A thousand books had they lever *to* be put forth,” etc.—*Tyndale*. “ I had rather be a door-keeper * * * than *to* dwell in the tents of wickedness.”—*Psa.* lviii., 10. That *had rather*, *had as lief*, etc., virtually constitute a “ principal verb ” will be still more apparent from the following ex-

amples: "I had as lief the town-crier spoke my lines."—*Hamlet*, iii., 2. "I had as lief they would put ratsbane in my mouth, as offer to stop it with security."—2d *King Henry IV.* i., 2. In these cases *had* becomes a transitive verb, having the clause following the word *lief* as its object. Our sticklers for *would* instead of *had* will here find their theory fail them. Suppose we substitute *would* for *had*, and read "I *would* as lief the town-crier *spoke* my lines," and "I *would* as lief they *would put* ratsbane in my mouth." Does this help the case in any manner? To argue as they do, we ask how much better is "would spoke" than "had spoke," or "would would put" than "had would put?" The truth is, that neither of these combinations is found here. The only mode of dealing with *had* is to take it as a "principal" verb, just as we should the word *would* if Shakespeare had written "I *would* as lief the town-crier spoke my lines."

Now for the grammatical character of our *had*. Like *would* in the same connection, it is not in the "potential mood, imperfect tense," as some teach; but it is the *present-tense* formed of what, for want of a better name, is called the "subjunctive mood." English verbs, properly speaking, have but two tenses in this mood, a present and a past, generally involving an assumed negation, or a supposition implied if not expressed. The *form* of the present subjunctive, except in the case of the verb *to be*, corresponds with that of the "imperfect" indicative; namely, *had*, *did*, *went*, *wished*, etc. As an example of *had* in the present subjunctive involving an assumed negation of possession, take the following: "I only wish I *had* his opportunities." In the phrases *had rather*, *had as lief*, etc., it presents examples of supposition either implied or expressed. "[If I were to choose between the two,] I *had rather* be right than be president." "*If you mouth it*, as many of your players do, I *had as lief* the town-crier spoke my lines." "[If such is the case,] *had* we not better leave this Utica?" And so in every instance. This is the simple solution of the apparent difficulty—nothing more, nothing less.

Hence, consistently with grammatical principles as well as with long established, unquestioned English usage, and that too of the best and most careful writers in the language, we

hesitate not to write "had rather," "had better," etc., whenever it suits our purpose. We have not that perception of the incongruity of this form of speech, or that uneasiness as to its grammatical soundness which some other writers have. And what is more, we do not care to have. We had rather continue in the old paths than go with them after the following fashion: "It appears with variations, slight indeed, but yet which *would better* have been avoided."—*Trench on Bible Revision*. A sentence that fairly bristles with errors! The dean wished to convey the idea that it would have been better to have avoided the variations referred to; and so, in his nervousness about *had better*, he stumbled on *would* instead of *might*, the true alternative of *had* here. He doubtless reasoned that "*had* is a 'corruption' of *would* ; therefore the uncorrupted form is the true one to use." We add two other examples, all we now have room for: "If there are any more committees to be sent up to dragoon the Legislature into passing the bill, they *may better* be quick about it."—*N. Y. Tribune*, Feb. 7, 1866. "Gov. Parsons said, he would like a million of dollars; and the eloquent apostle said, he thought Massachusetts *could better* lend it."—*W. Phillips, as reported in N. Y. Times*, Feb. 21, 1866. These are some of the fruits of such teaching as we find in the *Galaxy* for January. And the higher the source from which such teaching emanates, the wider and more deleterious its baleful influence.

The method which some have of trying to get over a seeming grammatical difficulty like this, is exceedingly, not to say provokingly, unsatisfactory. The expression may be authorized by the best and most correct of English scholars from time immemorial; but, if it can not be "analyzed," can not be "parsed," it is pronounced "a corruption," "illogical," "inconsistent," "unreasonable." The cry of "mad dog!" is raised, and at once countless nincompoops are pelting stones. Now, all this is wrong. The English language has modes of expression, and a grammar too, of its own. But because grammarians have failed fully to write that grammar and to explain all seemingly abnormal modes of expression, these should not therefore be condemned. Some of our sturdiest and best Saxon phrases would thus be

either emasculated or rejected altogether, and the tongue be made to suffer. The fault is rather with the grammarians, than with the language.

December 26, 1872.

S. W. W.

GEOGRAPHICAL NOTES.

UNITED STATES.—According to the *Sunday Chronicle*, of San Francisco, there has been a steady immigration from Australia and New Zealand to the Pacific Coast, for the past quarter of a century. It estimates that there are eighty thousand persons in San Francisco, and not less than one hundred thousand on the Coast, “whose first experiences of pioneer life were had on the gold fields of Victoria, amongst the squatters of New South Wales, or the whale-ships of New Zealand, or the bloody ground of Taranaki, or in the forests of Waikato.” Towards the end of 1869 “there were not ships enough bound for San Francisco in the harbors of Sydney and Newcastle, to bring away all who were anxious to flock to California,” but the depressed condition of the State in 1870 checked the rush, which has only partially resumed its former proportions. Nevertheless, “every steamer to San Francisco comes full, and more would follow if there was the necessary accommodation.” The same paper says that at the November election there were but 17,643 natives of the United States on the San Francisco register, out of 40,025 legal voters. The effective Irish vote numbers 9,822; the German, 6,723. The remaining foreign-born voters represent nearly every country on the face of the earth.

—The following extract is from an excellent article on ‘Teaching Geography in Country Schools,’ which we find in the December number of the *National Normal* (Cincinnati). The course prescribed may be most successfully begun in the nursery, and what phrenologists call the organ of locality be developed long before a child knows the meaning of the word geography:

“With a primary class, we would begin by drawing a diagram of the school-house yard, or, if it has no yard, of the interior of the

house itself, having the pupils locate the various objects. For example, this line represents the fence in front, and these others the fence surrounding, this mark the gate, and here the school-house and there the wood-house, and here a tree and there a rock; or, at this point is the stove, and there the cupboard and the teacher's desk, etc. From this we would advance to the drawing of the fields surrounding, locating everything of interest with a mark or dot. We would show them how a number of fields would compose a farm, and a number of farms a school district, and these again a township, and so on to county and State. In all cases we would have the *children* make the marks after the teacher had drawn the boundary lines. Thus they will get the true idea of a *map*. For the first lesson, they might be required to draw on their slates maps of the yard or an adjoining field, and the recitation be a discussion of the work of the pupils and a drill on the idea of *direction*, teaching how it is represented on maps. The fact of the earth's rotundity may next be introduced, and explained and illustrated by means of a globe or its substitute. All this before opening a book."

EUROPE.—Including Vienna, Germany now reckons eight geographical societies. That of Vienna has a membership of about 500; Munich, 400; Berlin, 380; Dresden, 270; Leipzig, 250; Frankfort-on-the-Main, 150; Kiel, 100; Darmstadt, 80.

ASIA.—It is stated that since 1785 the Brahmaputra River, of Bengal, has shifted its main channel nearly two hundred miles to the westward, ruining many ancient cities and giving birth to new centres of trade and population. These changes, it is believed, produce the malarial fevers common to the low-lying districts of India. In spite of these, of famine, and of the cholera, the latest census of Bengal (1871-72) reveals a population far in excess of the prevailing computation (about 40,000,000), being not less than 66,000,000. Exemption from wars has apparently been sufficient to overcome all influences adverse to the native increase, for which, it is true, other conditions also are extremely favorable.

NORTH POLE.—Referring to our last article on this subject, in our September Notes, we may say that the report about Capt. Hall which we characterized as of doubtful authenticity, has been proved a pure invention. The latest intelligence received from him by the Navy Department

bears date of Aug. 20, 1871, at Upper Upernivik, and Aug. 22-25, at Tessiusak, the northernmost settlement in Greenland, lat. $73^{\circ} 24'$, where the expedition bade farewell to civilization. Singularly enough, M. Pavy has also been made the subject of false tidings, representing him to have reached Wrangell's Land and to have found all his theories of arctic currents and continents confirmed. A comparison of dates at once betrays the forgery. M. Pavy, it is said, was landed on the shores of Koliutchin Bay (northern Siberia) on the 18th of June, and by the 23d of August, the date of sending off the despatches, had crossed Wrangell's Land and penetrated a great river valley for 230 miles. Now, the expedition did not leave San Francisco before the middle of June, and was to call at Petropavlovski in order to complete its preparations, and M. Pavy stated, in his reception before the California Academy of Sciences, that he did not expect to reach Wrangell's Land till Sept. 1, nor to cross it before May, 1873. At this reception, which occurred June 5, Prof. Davidson, of the U. S. Coast Survey, disagreed with M. Pavy as to the value of the Japanese "gulf stream," the Kuro-Siwo, for clearing a way to the Pole through the Arctic Ocean; Behring's Straits being but 25 miles wide, with an average depth of only 25 fathoms, and the rate of the current flowing through it being from a half to three knots an hour. Moreover, he believed Wrangell's Land to be no true continent, but an archipelago. So it is still doubtful whether M. Pavy will encounter Capt. Hall in Smith's Sound and Baffin's Bay, or fall in with the Austrian Expedition of Payer and Weyprecht, which left Tromsø, in Norway, in July, and in the latter part of August reached safely the Gulf of Petchora, in Northern Russia. It encountered the first ice-barrier July 25, but found it easily penetrable by the steamship *Tegethoff*. As for Prof. Nordenskjöld, of the Swedish expedition, he sailed from Tromsø July 21, thoroughly equipped with a portable house, three sledge-boats for ice-traveling, reindeer, etc., etc., but in vessels ill fitted to contend with the ice. Sept. 1 he was seen to pass the northernmost point of Spitzbergen. Subsequently fears began to be entertained for his safety, and vessels were sent to his relief, but happily they were not

needed. An amateur English explorer, Mr. Leigh Smith, has made a second voyage to Spitzbergen in his yacht the *Sampson* (150 tons). In 1871 he reached the high latitude of $81^{\circ} 15'$, but in 1872 only attained $80^{\circ} 30'$. Another Englishman, Mr. Edward Whymper, well known for his charming work on Alpine adventure, spent July and August in Greenland, and made some important collections, besides measuring a base line and determining the height of several mountains. He found a great valley leading into the interior of Disco, and went up it—a hard day's march. Of the climate in this region, he says (*Nature*, Nov. 7, 1872):

“In the middle of May, floe ice disappeared in Umenak Fjord, which was fully six weeks earlier than usual; and in April, in Godhavn men went about in summer attire. When I arrived (on July 6) the land was covered with flowers, the butterflies were beginning to appear, and almost all snow had vanished from the sea-level up to 2,000 ft. Since then, [i. e. till Sept. 10] with the exception of a bad week in the Waigat, I have enjoyed the most exquisite weather that it is possible to imagine. In this arctic region it has only frozen on two nights, and during the daytime the thermometer has ranged from 50° to 70° . Until recently we have also had a high barometer; and, upon the whole, very little wind.”

The Royal Geographical Society has recommended a thorough exploration of the unknown shores forming the northern side of Greenland from Smith Sound. Capt. Nils Johnsen has visited the land known on older maps as Wiche Land, lying between Spitzbergen and Nova Zembla, $79^{\circ} 8' N.$, $30^{\circ} 15' E.$, and found that from its heights an open sea was visible to the E. and N. E. as far as the eye could reach. This was on Aug. 17. The island is 44 miles in length, abounds in reindeer of large size, has no snow field of any extent, and only one glacier, and its coast for 100 ft. inland is piled to the height of 20 ft. with drift-wood, probably washed out of the mouths of the Siberian rivers. The principal Arctic discovery of the past season is thus described by the *Athenæum* (Nov. 9):

“Tobiesen, Mack, Johannesen, Isaken, Dörma, Carlsen, and other Norse walrus-hunting captains, have year after year sailed to the eastward of Novai Semlai, into the Siberian ice sea, and found the sea free from ice even on the 15th of October, with unmistakable traces of the Gulf Stream in the shape of a higher temperature of the

sea. and West India fruits tossed ashore on the islands. Thousands of white whales played in the open sea to the eastward, and, so far as any appearance of ice went, there seemed little to prevent a vessel sailing through to Behring's Straits in one summer! Whatever may be said of the open sea to the northward (and this will be tested by the Swedish Expedition in the course of next spring), no reasonable doubt can now exist that what Dr. Petermann sagaciously maintained, after an exhaustive study of the logs of the Norse walrus-hunters and others, is absolutely proved, notwithstanding the violent opposition he had to encounter from less well-informed opponents, viz., *that nearly every year the sea to the east of Spitzbergen and Novai Semlai is free from ice.* Perhaps no more significant fact has been added to our knowledge of Arctic Geography of late years, and all honor is due to the men whose courage and untiring industry established it. A very careful survey has been made of the north-eastern portion of the Novai Semlai, and many new names added to our charts."

Bibliography.—CREAGH, JAMES. A Scamper to Sebastopol and Jerusalem in 1867. London, 1872. [See review in *Athenæum*, Dec. 7.]—HERBERT, Lady. A Search after Sunshine; or Algeria in 1871. London, 1872. [*Athenæum*, Dec. 7.]—STANLEY, HENRY M. How I Found Livingstone: Travels, Adventures, and Discoveries in Central Africa, including Four Months' Residence with Dr. Livingstone. New York: Scribner, Armstrong & Co. 1872.

Periodical Literature.—*Nature* for Nov. 14 and 28, 1872, contains a series of articles (unfinished) giving the substance of Dr. Neumayer's recent pamphlet on the history of South Polar Exploration. [See November Notes.]

—"Mr. J. K. J. De Jonge has published in Dutch an interesting account of the Barentz relics which Capt. Carlsen brought from Novai Semlai in 1871. They recall a strange old tale of the past. When Barentz and his companions wintered in Novai Semlai in 1597 they erected a wooden house to live in, a picture of which is given in Gerret de Veer's quaint narrative of the voyage. Since that date the house has never been visited; indeed, it was never supposed that it could be in existence until Capt. Carlsen landed last year and found it in much the same state as Barentz left it, when he undertook his wondrous boat voyage to the south. The cold Arctic air had prevented the timbers crumbling into dust, and preserved within it several most interesting relics, which eventually found their way into the hands of the Dutch Government. Among others is the old clock, which figures on the picture of the interior of the house as given by De Veer, and a copper dial, through the middle of which a meridian

is drawn: this is believed to be an instrument for determining the variation of the compass, such as that invented by Plancius, the famous cosmographer, whose pupil Barentz was; if so, it is perhaps the only specimen of the instrument in existence. Three books—a translation of Medina on Seamanship (1586), a Chronicle of Holland, and a Dutch translation of Mendoza's History of China, which doubtless the famous seeker after a north-west passage to 'Cathay,' supposed might be of use to him when he arrived in that country—and an old flute, which beguiled their solitude, and after a lapse of nearly three hundred years can still give forth a few faint notes, are also among the relics. William Barentz played on this flute when he and his mariners kept Twelfth Night and 'made pancakes with oyle, and every man a white bisket, which we sopt in wine; and so, supposing that we were in our owne countrey, amongst our friends, it comforted us as well as if we had made a great banquet in our owne house; and wee also made tickets, and our gunner was King of Nova Zembla, which is at least 200 miles long, and lyeth between two seas.' In the house lay still the ashes of the fire at which they had sat—their toes burning, and the hoar frost lying on their backs, white 'as are the countymen coming into the tounes in Hollande, after they have travelled all nighte' in winter. In this 'wilde, desart, irkesome, fearfull and cold countrey,' the little ship's boy could bear up no longer, and died—a few months before his master. They dug a grave for him, seven feet deep in the snow, and 'after we had read certain chapters and sung some psalmes, we all went out and buried' him. The small shoes of the poor boy are among this strange collection!"

Cartography.—We have only room this month to enumerate the maps which accompany the Ninth Census. They are intended to show to the eye by means of dark and light shading, and by certain colors, statistics not otherwise so easily comprehended. Thus, it appears at a glance that north of a line drawn west from the southern boundary of Massachusetts, the colored population of the U. S. is insignificant (less than two to the square mile), except in Boston and Chicago; while it is densest (over 20 to the square mile) in a nearly continuous belt from Baltimore to New Orleans, following the line of the coast, but generally at some distance from it. The chart showing density of population is nearly the reverse of the foregoing, the heavy shading being in the Northern, the light in the Southern half; and still more nearly opposite is that showing the foreign population, indicated in the South only by little purple dabs and patches, about the large cities. The latter chart is

again analyzed into one for the German population (colored brown), another for the Irish (colored green), and still others for the English and Welsh, British American, Swedish and Norwegian, and Chinese respectively (colored red, on one sheet). The most striking correspondence is observable between the chart showing the area of slavery and that of illiteracy, and the greatest contrast between these and the wealth chart (colored yellow). Finally, a large chart shows clearly in red shading the area of the U. S., and the acquisition and transfer of territory from 1780 to 1870. We need hardly add that these maps should find a place in every school-room.

Photography.—We continue our selections from the stock of Messrs. E. & H. T. Anthony, No. 591 Broadway: (1) views in the United States; (2) views in what some people are over-anxious to make a part of the United States, viz., Cuba.

No stereoscopic views with which we are familiar compare with those of California scenery now before us. (As mounted, they are a little longer, and considerably broader, than the ordinary card, and in both respects better fitted for the hand stereoscope than for the box.) Thirteen of them picture the Yosemite Valley (a); two the Big Trees (b); and two the Central Pacific Railroad (c).

(a) Prof. J. D. Whitney's monograph on the Yosemite Valley is the most accurate and scientific account of this wonderful "sink" that has yet appeared or is likely to appear. As it may not be accessible to our readers, we can refer them to Bowles's "Across the Continent" for extracts on the same subject from Prof. Whitney's Geological Reports (p. 429); and, for a popular account of the valley, to p. 223 of the same work, or to p. 95 of Brace's "New West" (New York: Putnam); while Appleton's "Hand-book of Western Travel" (pp. 290 and 297) gives maps of the various approaches to the valley, and of the valley itself, with all the prominences marked. Armed with these, or with Hutchings's Guide-Book, and with Messrs. Anthony's views, one may form as just an idea of the scene (save as to color alone) as if he had been there. No. 131 is a general

view of the valley, and the favorite one, from Inspiration Point, Mariposa trail (looking N. E.). On the left is the precipitous front of El Capitan, 3,300 ft. high; opposite, the Bridal Veil Fall, 940 ft.; and the Cathedral Rocks, 2,600 ft.; and still further east appear the Sentinel Rock and Dome, the Half Dome, and, in the extreme distance, the snow-clad Sierra. The northern side of the valley is hidden behind El Capitan. The view gives one a very good idea of the narrowness of the valley. No. 139 is a still finer view of El Capitan (from the east), with its reflection in the Merced River; No. 49 shows the reflection alone, on a larger scale. No. 164, the Half or South Dome, 6,000 ft., as seen from the meadows, and No. 7,360, the same as seen from Lamon's Farm, differ only in their instantaneous cloud effects, which are very striking. No. 159, another view of the south side, shows Sugar Loaf, Mt. Storm King, and Glacier Rock, and is also noticeable for its clouds. No. 135, 135 A is a vista down the valley, with Cathedral Rocks in the distance, capped by the clouds. On the north side: No. 99, Watkins' and Clouds' Rest Mts. beautifully reflected in Mirror Lake; No. 180, Mt. Hoffman, 10,872 ft., overlooking a cañon of fearful depth; No. 146, Yosemite Falls, 2,634 ft., an instantaneous view, from below, supplemented by No. 151, the same from Point Louise, embracing the mountainous sources of the stream, and a portion of the valley below; No. 51, the Three Brothers, 4,000 ft.—singular leap-frog forms. No. 132 gives a view of the valley from Pinnacle Rock.

(b) No. 4, the Father of the Forest, a prostrate sequoia, 450 ft. long, which in its decay resembles a railroad embankment; the view is along the trunk. No. 11, section of the original Big Trees. On the steps leading up to the top three men are standing one above the other, and we may guess the diameter to be not less than eighteen feet.

(c) No. 7,119, snow sheds and Summit Station; No. 7,116, interior of these sheds—views which make the building of the Pacific Railroad seem more stupendous than ever. The sheds have a double pitched roof, with frequent ventilators that look like chimneys.

For the Cuban views we may first open Stieler's new map No. 87, and as accompanying text take (say) "Maga Excur-

sion Papers" (New York: Putnam), which tells on p. 209 how they live in Havana; and "My Winter in Cuba" (New York: E. P. Dutton & Co.), which also deals with Havana, but also gives glimpses of plantation life. That kind of life, which now seems very remote from America though in reality close at our doors, is depicted in the following: No. 75, the exterior of a sugar mill, with piles of cane; No. 172, loading cane before the same; No. 119, drying the bagasse (refuse cane after it has passed through the rollers, used for fuel); No. 72, the fire-hole; No. 120, rollers, vats, and troughs; No. 67, the sugar ready for market, loaded in hogsheads on the bullock-carts. In nearly all these the slaves appear, rudely and scantily dressed. In No. 133, making sugar, we have two Chinamen, stripped to the waist. Nos. 68, 77, 168, groups of field and house slaves, very interesting to compare with similar scenes in the South. No. 31 is a broad view of the famous Moro Castle, at the entrance to Havana harbor. No. 60 gives the front elevation of the Cathedral in which Columbus's remains repose; No. 59, the same in perspective, together with the fish-market, supplied from the coral-reefs, on which account, it is said, the fish though firm are insipid and tasteless. No. 89, the Calle de Obispo, looking toward the Plaza; in the middle of the street and at the sides one sees the peculiar Cuban *volante*, a chaise-body set not on, but forward of, the great wheels, and with the driver on horseback. No. 37, the Calle de Oreilly, a great business street, but disproportionately narrow; the buildings one-story high and tile-roofed. No. 2, the Plaza de Armas; No. 41, the avenue of royal palms on the Paseo; No. 15, Cocoanut trees in the Bishop's garden—three fine studies of tropical vegetation. No. 125 is a street view in Matanzas; No. 111, the bank of the St. John's River, Matanzas; and No. 124, the world-famous and paradisiacal valley of the Yumuri, near Matanzas—a fairly successful and suggestive panoramic view.

Obituary.—Among travelers of note deceased during the past year was Charles Ferdinand Appun, a German, who had long been an explorer of British Guiana, and who had done more than any one else to make that rich and beauti-

ful country known. The manner of his death was remarkable. At the beginning of the year he had set out for his favorite field, and was fairly engaged in the interior when, towards the end of June, having discovered that his Indian comrades were preparing a terrible martyrdom for him, he took poison, lingered two days in great suffering, and so expired.

*EDUCATIONAL TOUR TO EUROPE AND THE
WORLD'S FAIR.*

MANY of our readers have no doubt received an intimation of a pleasure excursion under the title with which we commence this article, designed to occupy the summer vacation.

The suggestion of such a tour is so novel, and is so appropriate for the class of ladies and gentlemen for whom it is designed, that we have been led to make some inquiries in regard to it and its projectors.

Some thirty-two years ago Mr. Thomas Cook, senior member of the firm which is to conduct the proposed excursion, was a leader in the temperance cause, and at a meeting held at Leicester, England, proposed that a special train should be run on the Midland Railway, to carry a large body of "teetotalers" to a meeting at Loughborough. Mr. Cook was then a cabinet maker, and of course without influence with railway authorities; but by skillful management, he arranged the party and carried it over the proposed route with great success. This was the first tour. After that there were numerous calls from all sorts of societies, who wished a day in the country. Mr. Cook soon found it advisable to give up cabinet making and take people on excursions. The range of these excursions gradually extended from England to the Continent, and has grown until the limit seems to be reached, for now this firm take travelers around the globe. We mention these facts, that our readers may know that the projectors of the trip to Vienna have had experience in their business, and are reliable men.

It is not pretended that the firm are doing missionary work. They of course expect to make money from their patrons; but they have perfected such a system that they can make better terms with steamers, railways, and proprietors of hotels, than single travelers can. Tickets are issued which take the voyager over any route he may select. All directions are printed in English on one side and on the other in the language of the country through which the route passes. They issue hotel coupons, which are good for specified hotels, and are accepted by the proprietors instead of money. So the traveler has no trouble with tickets, hotel bills or with fees. We mention these advantages, hoping that it may induce many of our teachers to avail themselves of this opportunity to see Europe during the summer vacation. We have given a general idea of the system of Messrs. Cook, Son & Jenkins. If any desire more particular information, it can be obtained by writing to their office, No. 262 Broadway, New York. The cost of the excursion to Vienna will be \$400 gold. The party will leave New York on Saturday, June 28th, on a special vessel chartered for the purpose. One will be selected capable of accommodating one hundred and fifty passengers, who will land at Glasgow about the 9th of July, then for a tour, according to the following programme, which we take from the printed advertisement :

“ The route will be by steamer to Glasgow; thence to Edinburgh, passing through Loch Katrine, Loch Lomond, The Trossachs, and stopping to view the famous castle at Stirling; from Edinburgh to Melrose, to see the Ruined Abbey, and to Abbotsford, the home of Sir Walter Scott; then to London, stopping for a day at Alton Towers, the property and residence of the Earl of Shrewsbury, the handsomest baronial hall in England, with the finest gardens in Europe; from London to Cambridge, to see the famous University; then over the German Ocean and up the river Scheldt to Antwerp, and by rail to Brussels and Cologne; from Cologne we go by rail up the Rhine to Bonn, where an opportunity will be had to see its famous schools, after which we will take the steamer on the river to Bingen or Mayence, then *via* Darmstadt, Aschaffenburg and Wurzburg to Munich, the capital of Bavaria; then to Vienna *via* Salzburg and Linz. After spending sufficient time to see the Great Exposition, our return will be commenced to Munich *via* Passau and Regensburg; then to Augsburg, Lindau, and over the Lake of Constance to

Romanshorn, and rail to Winterthur, Schaffhausen, Zurich, Zug and Lucerne; then by steamer on Lake of Four Cantons to Alpnach, where we take the Diligences of the Federal Post over the Brunig to Brientz; then across the lake to Giesbach, where the wonderful illuminated water-fall is to be seen. Next morning we go to Interlaken for a look at the 'Young frau' and go to Berne, by lake and rail, to sleep; then to Lausanne and Geneva; from Geneva to Paris *via* Dijon, and Fontainebleau; then back to London by Rouen, Dieppe and New Haven; from London to Glasgow, where the steamer will be taken for New York on Wednesday, August 20th; due in New York, Aug. 31st.

"Thus furnishing one of the Grandest Excursions ever Planned, embracing nearly all places of interest in Continental Europe as well as Great Britain."

In order to avoid the discomforts of so large a party as 150, the company will be divided into sections of convenient size. A conductor will go with each section. We hope that many teachers may be able to avail themselves of this opportunity to travel cheaply in Europe. It is the dream of many a teacher's life to see the Old World, and we are glad that so many may now realize it. It will educate them more than months of study at home.

DEATH OF PROFESSOR HADLEY.

It is sad news to every friend of sound learning in this country that Professor James Hadley is dead. And there is no classical or linguistic scholar in the country who has not known and admired his attainments and respected his opinions as an author.

"James Hadley was born in Fairfield, N. Y., March 30, 1821 (the year after President Woolsey graduated). He graduated at Yale, in the class of 1842, remained there engaged in private study during the next College Year, and was a member of the Theological Seminary for the greater part of the two years following. In 1845 he became tutor in the College, was elected Assistant Professor of Greek in 1848, and, in 1851, became the head of the department on President Woolsey's resignation of his chair in it. He continued in active discharge of his duty, with the exception of two years, 1865-7, when his health failed, until a few weeks before his death."—*Yale Courant*.

CORRESPONDENCE.

MR. EDITOR,—I have read the letter of Mr. J. Dorman Steele in the December number of the EDUCATIONAL MONTHLY, and as it is written with so much candor and fairness, I take great pleasure in replying to that part of it which relates to the article on "School Histories and Some Errors in them."

My authority for the statement that the grant of August 10, 1622, was not called Laconia, is the grant itself, of which a copy may be found in New Hampshire Provincial Papers, Vol. I, Concord, N. H., 1867. It is there stated that the grantees intend, "with the consent of y^e President and Councill," to name it "The Province of Maine," and Laconia is nowhere mentioned in the patent. The Rev. Dr. Bouton; the editor of the volume, calls attention to the fact that this statement differs from that usually made by historians and others who have written on the subject.

The authority for saying that the grant of November 17, 1629, was called Laconia is equally good, it being the grant itself, of which a copy, made in 1763 and duly certified, is in the Massachusetts State Archives. This instrument says that the grantees intend to name it "the Province of Laconia." The confusion between these two grants started with Dr. Belknap, in his History of New Hampshire, and has been kept up for nearly a century.

With regard to the story of Pocahontas, Mr. Steele asks, *Cui bono?* I will reply, this *bonum*, that in history we must have facts. Fiction is very well in its proper place, but in history we should say that it is never "good" or "harmless." The reader may connect with any past event as much romance as he fancies, but the writer should carefully abstain from it. I entered into no controversy about the character of Pocahontas, and certainly have no more inclination than Mr. Steele has, "to join in the effort to soil the pure and beautiful reputation which the little Indian maiden has acquired." In the statement of historical facts, we should aim at strict accuracy. Simple errors may become important ones before they are detected, and they

are sure to entangle readers as well as writers. It is the duty of all good citizens—even at the risk of being classed as “vampires of history”—to stop them as soon as they are found. If we would keep the stream clear, we must look carefully to its sources.

Very truly yours,

SAMUEL A. GREEN.

BOSTON, December, 1872.

EMINENT TEACHERS DECEASED IN 1872.

DEATH visits with equal impartiality the teachers and the taught, and no year passes in which he does not bear off some whose place it would be hard to fill. The year 1872 had not, perhaps, quite so large a number of these conspicuous names as some former years; yet among its eminent dead in our own profession, we find College presidents and professors, who have not, in some respects, left their peers behind them. Professors Thomas C. Upham, Albert Hopkins, Daniel Treadwell, Samuel H. Dickson, Francis Lieber, Ephraim D. Saunders, Francis Vinton, Edmund Turney, John W. Frazer and James Hadley, that prince of scholars, and President George W. Eaton, Nathaniel Moore, and Lorenzo B. Allen, are not men to be replaced at will in our Colleges and Universities. Nor, abroad, are such philosophers as Feuerbach and Freudenberg; such linguists as Goldstücker and Cöhler; such scientists as Babinet and Peetet de la Rive; such orators as Perè Gratry and Frederick Denison Maurice, or such historical teachers as Merle D'Aubigné and Robert Prutz, abundant even in the great universities of Europe. Yet these, and scores more, only less eminent, are among the dead of 1872. We shall endeavor, as in former years, to give some brief notices of these teachers who have fallen at their posts, both in honor of the dead and for the encouragement and edification of the living.

EDUCATIONAL INTELLIGENCE.

SAVANNAH, GA.—The Seventh Annual Report of the Superintendent of Public Schools gives the following facts: Number of teachers employed, 48. 2,513 pupils were enrolled during the year, and the average attendance was 1,906. The cost of instruction was \$17.90 per pupil. Weekly meetings of the Normal class were well attended. The report speaks highly of the satisfactory results of written examinations. Unfavorable accounts are given of the condition of the three county schools. The amount of compensation which the teachers receive is dependent upon the number of pupils. The small and uncertain salary causes frequent changes, and the results are injurious. Truancy has increased to such an alarming extent that the appointment of truant officers is suggested. They are to have the power to arrest and take back to school any scholars found playing in the streets during school hours. It would seem, however, that the remedy for this evil lies with parents.

OWENSBORO, KY.—The School Board report a sad condition of affairs. The school buildings are bad, and there is no money in the treasury. In fact, there was a deficit, last year, of \$140.70. For the ensuing year it will be \$4,634.60, if the Board make improvements which are absolutely necessary. The expenses of education are not great. With the buildings paid for, it would not exceed \$8 for each pupil per annum. The citizens should willingly provide for the support of their schools. They cannot make a better investment. The Board make an appeal to the people for money, and say that if it is not provided they will pay debts with the funds of the next year, and close the schools. The number of pupils who would thus be deprived of educational advantages is 506. The number enrolled is 623.

WILMINGTON, DEL.—At the Teachers' Institute, which all the teachers attend, methods of instruction are discussed, and essays on educational subjects read. The result cannot but be highly beneficial. Many teachers also

prosecute their studies in the Normal school. Improvement seems to be the order of the day. A new Grammar school for boys, affording instruction beyond the scope of the ordinary schools, has been established and has met with success. The Board has taken charge of a night school, which was formerly supported by private enterprise, and has opened three other night schools. The number of pupils in attendance upon these schools was 275. Seven teachers have been added to the list since the last report, making the number 78; of these, 16 are in grammar schools, and 62 in the primary departments. The average number of attendants was 3,503—90 per cent. of those enrolled. The value of the school property is estimated at \$173,395.20.

SAN FRANCISCO, CAL.—CITY AND COUNTY.—The Superintendent of Common Schools gives some interesting statistics in his report for the year ending June 30, 1872 :

| | |
|--|--------|
| Number of children between the ages of 5 and 15..... | 31,936 |
| Average attendance at public schools..... | 20,202 |
| “ “ “ private schools..... | 5,005 |
| Approximate number of non-attendants..... | 5,532 |
| Number of pupils studying German..... | 4,431 |
| “ “ “ French..... | 2,918 |
| “ “ “ both..... | 965 |

There is also a list of expenditures for the last 21 years :

| | |
|---|-----------|
| The smallest amount expended was in 1852..... | \$ 23,125 |
| The largest “ “ “ 1871..... | 705,116 |
| The disbursements for 1872 were..... | 668,262 |
| The total amount for 21 years is..... | 5,599,572 |

The course of study has been cut down to a reasonable limit, and it is found that the scholars perform their work better than when they had more to do. During ten months of the year evening schools have been continued. In general, the report shows a prosperous state of affairs.

PROVIDENCE, R. I.—It is an encouraging sign of the times that almost every Superintendent's report speaks of the successful operation of the evening schools. It is a good indication; because, the establishment of such schools is only the supply made necessary by the demand. Eight have been supported by the Board; and, in addition, five

vacation day schools have been opened. These are in session during July and August. There is also a Sewing school for girls. Every opportunity for acquiring an education is thus afforded. The number of school houses is 36; which, with their sites and furniture, are valued at \$1,000,000. The number of scholars in attendance was 8,646. In speaking of faithful teachers the Superintendent says: "The teachers of this class, standing at their post for many years, always keeping ahead of the times in their work, are the ones who earn their salaries over and over again, and who deserve *liberal pensions* when, by reason of age, or ill health, they retire from positions which they have faithfully filled for so long a time." To provide such pensions would be a generous act, but it is no more than justice demands. In looking over the list of teachers in Providence we find one lady who has served nearly 30 years, and several who began to teach there 20 years ago.

KIMBALL UNION ACADEMY, Meriden, N. H., has made decided gains during the past twelve months, having 137 names on the roll against 96 a year ago. About \$20,000 of a proposed additional endowment of \$100,000 has been raised.

HARVARD COLLEGE, while declining to admit the girls to the regular course, has yet made some concession to the demand for higher educational facilities for women. It proposes to hold local examinations, after the plan pursued for some nine years now by Cambridge University, England. Two classes of candidates will be examined; those under eighteen years, and those over that age. Certificates will be issued to those who stand the test, and certificates of honor to such as acquit themselves with credit. These certificates will be equivalent in value to diplomas, and may do much to stimulate young women to enter upon completer lines of study than they would otherwise pursue, as also to raise the standard of scholarships in girls' schools. And who knows but by and by the doors of Old Harvard may be flung as wide open for the girls as for their brothers? Any how, it will be a gain to the young women to know for certain whether they know a thing or not!

PRESIDENT ANGELL, of Michigan University, is to deliver a course of lectures on Journalism before the students sometime during this year. As the Doctor was formerly connected with the journalistic profession, these lectures will possess great value.

.HOPE COLLEGE, Michigan, is to have a Female Seminary connected with it. The new institution will be under the supervision of the college authorities.

THE science of politics is now a regular branch of the educational system of France. In Paris a Free School of Political Science has been in operation for a year.

FROM the address of President Edwards of the Illinois State Normal University, delivered in June last, we make the following extracts: "Since the founding of the institution (in 1857) there have been in the Normal School for a longer or shorter time 2,617 pupils, making the admissions on an average $174\frac{1}{2}$ per year. But for the last two years the admissions have averaged $266\frac{1}{2}$ per year. In the Model School the total attendance has been 2,626." The cost per pupil is \$91.61. In consequence of the increased value of the property owned by the school, President Edwards finds that "the State of Illinois has, by this enterprise, secured for nothing all the instruction imparted here and made \$32,259.32 besides. And, indeed, the gains have been much greater than this, for the value of the Museum, now the property of the State, is not here counted."

THE attendance upon public schools in Mississippi is 117,683; that upon private schools 7,180. The number of free schools in the State is 3,456. Though possessing a permanent school fund of over \$2,000,000, through defective legislation none of the interest arising from its investment has ever been applied to the free schools.

THE Legislature of Massachusetts has passed a law authorizing the establishment of Schools of Design in every village—the object being to improve education among artisans. In every town of ten thousand inhabitants the State will maintain at least one such school.

THE Natural Sciences are taught in the common schools of Illinois, and Mr. S. A. Forbes, of Normal, is to make collections of specimens in Natural History for the use of all the schools. In order to accomplish this he invites contributions from teachers in the State.

THEY have compulsory education in Texas. The law requires that all persons under the age of fifteen shall attend school. A married lady in Houston, who has not yet reached the age that would entitle her to exemption, attends school regularly and carries her baby with her.

UNION COLLEGE, at Schenectady, and the Medical College, Law School, and Dudley Observatory, at Albany, have consolidated under the title "Union University of the State of New York." In the absence of accurate information on this subject we must say we do not see the advantages to be derived from this union, unless the college is moved to Albany and its standard raised to what a University should be.

THE Governor of Virginia, in his annual message just submitted to the legislature of that State, congratulates the members upon the growth of education during the past year. The attendance in the common schools has been over one hundred and sixty-six thousand, and there has been a marked improvement in their administration. The State treasurer of the same State says that Virginia, in proportion to her population, has a greater number of colleges than any other State in the Union.

PROMINENT educators of Ohio have resolved to have the system of education in that State properly represented at the Vienna Exposition.

VIRGINIA is making most gratifying progress in common school education. It has now 91 school superintendents, 3,853 teachers, 3,695 schools, 107 of which are graded, and 166,377 scholars. The increase last year was, in schools, 648; in pupils, 35,289; in teachers, 769; in school houses, 414. Of the ninety-nine counties in Virginia, ninety-three report a favorable change in public sentiment respecting the common school system. Eighty-six superintendents re-

port improvement in the qualification of teachers. Institutes have been held in seventy-seven counties and cities. School houses have been improved in eighty-seven counties. Eighty-nine counties report continued interest in education on the part of the colored people.

AN exchange says—"Rev. W. H. De Motte, President of the Jacksonville (Illinois) Female College, whose burning we noted last week, bravely says that, 'Though badly burned, we are not totally consumed,' " etc. Was it the college or the Reverend gentleman that was "badly burned" but not "totally consumed?"

THE University of Vermont has seven female students. In scholarship they rank as high as their classmates. Why shouldn't they?

COLORED children are not allowed to attend the public schools in Alleghany City, Pa. The colored citizens held a meeting to protest. A test case has been brought up in the courts.

CURRENT PUBLICATIONS.

DR. HART'S MANUAL OF AMERICAN LITERATURE⁽¹⁾ is constructed on the same plan, and shows the same handling of materials, as the *English Literature* which we noticed last month. As a "Text-Book for Schools and Colleges," therefore, it is open to the same criticism; that is to say, it is totally unsuited to its purpose. As a reference-book, it has like merits with its predecessor. It is cheap, comprehensive and easy of consultation. It presents rather more illustrative extracts, though many of them are exceedingly familiar; *e.g.*, "Marco Bozzaris" and "The Old Oaken Bucket;" and we could afford to do without specimens of the heterographic "humor" of "Josh Billings" and "Artemus Ward" and their kind.

It is nothing strange that Prof. Hart's ideas of perspective and proportion should differ from ours; every author must

(1) A MANUAL OF AMERICAN LITERATURE: A Text-Book for Schools and Colleges. By John S. Hart, LL.D., Professor of Rhetoric and of the English Language and Literature in the College of New Jersey. Philadelphia: Eldredge & Brothers, 1873.

write from his own point of view. Yet we are a little surprised to find that Miss Leslie occupies 157 lines, while Mrs. Putnam has but 3; "John Paul" two pages, twelve times as much as John W. Draper; "Mosiz Addums" two and a half pages, and Rufus Choate but 11 lines. The most minute sketch in the volume recounts the literary labors of J. S. Hart, LL. D., and shows him to have written and edited a great many thousand pages, 8vo, 12mo, and 18mo; Horace Bushnell has 10 lines; Mark Hopkins 8; Edward Beecher 4. Full notices are given of eminent school-book authors and editors, such as Quackenbos, Smith, Greenleaf, Hanson and Steele; while we find no mention of such obscure scholars as Noah Porter, James Marsh, Sophocles, Drisler, Loomis, Goodwin and Hadley. Dr. J. C. Dalton fills two and a half lines, and gets that much space for the sole reason, apparently, that he has written a *Physiology for schools*. Such representative theologians as E. H. Sears, J. F. Clark and Abel Stevens are not admitted; nor do we find the names of Geo. T. Curtis, Elisha Mulford, the historians E. H. Gillett and Samuel Hopkins, nor even that of Thomas Paine, not to name other prominent men of his time; but in their stead we have whole pages of such weighty names in literature as Henry Stevens, Richard Stirling, and Misses Dargan, Elenjay and Upshur, of all but the first of whom (and of scores equally illustrious) we confess, with due mortification and self-abasement, that we hear now for the first time Torrey, however, the accomplished translator of Neander, and his namesake of scientific fame, we have heard of, and seek their record in vain.

The value of such a work lies mainly in its accuracy and completeness. Of course some articles are more satisfactory than others. One is a little disappointed to find, under the name of Bryant, no mention of his translation of Homer, though place is found for Munford's version; under that of Lieber, nothing about the *Encyclopædia Americana*, which he so ably edited; no recognition of Prof. Child's studies on the language of Chaucer and Gower, (known and lauded in England, if not in New Jersey), nor of the *Four Plays* which he edited in 1848; nor of Stockton's praiseworthy attempt

to publish the books of the Bible in separate volumes, with notes, indexes, etc.; nor of Noyes' *New Testament*,—and so we might run on indefinitely. Fremont is denied all mention of his political career. Miss Bacon's effort to prove that Shakspeare did not write Shakspeare's Plays is duly recorded, but Prof. Holmes and his abler work with a like aim are omitted. Dr. Bushnell is said to have written "Christian Mothers" and "Christian Theology," books we have never seen; though we have long known his *Christian Nurture* and *Christ in Theology*. The titles of some of his occasional discourses are given as "principal works," while his *Vicarious Sacrifice*, the occasion of so much and so violent discussion, his *Woman's Suffrage*, and three (now four) volumes of discourses are passed over. Of O. M. Mitchell, we are told that "his published works are The Planetary and Stellar Worlds; and The Orbs of Heaven;" a list purporting to be complete. Our set contains the first named, with *Popular Astronomy* and *The Astronomy of the Bible*, 3 vols. S. P. Andrews' *Universology* and Poe's "prose poem" *Eureka*, are not named. Cheever is said to have written "The Pilgrims in the Shadow of the Jungfrau;" Shedd to have published "Eloquence and [a] Virtue;" "Professor" Marsh to have issued an Icelandic Grammar compiled from *Trask* [Rask]; S. H. Taylor to have "compiled" an Elementary Greek Grammar from Kühner's larger work [He says he *translated* it from the *Elementargrammatik* of the same author]; Dr. Park to have been Professor of Theology at Andover from 1836 [He was Professor of Sacred Rhetoric till 1847]. Very many of the lists of writings which we have examined fall so far short of accuracy and completeness, that we put but limited confidence in any of them. *Per contra*, we have lyrical writers catalogued here for having produced a single acceptable hymn. The originators of three of the great New York dailies are duly honored, but not James R. Spaulding, who started *The World*.

Of misprints there are more than there ought to be. Chas. "E." Eastman's middle name was *Gamage*. Lowell did not write the "Bigelow" Papers. There never was a French critic by the name of "St. Benve." D. G. Mitchell

was not the author of "Dr. John's." E. P. Whipple, the brilliant essayist and critic, does not spell his middle name "Perry." "Peter Parley's" real name was not "S. S. Goodrich." There is no "Burlington University" in Vermont. For "Brownville Papers" read Brawnville Papers. The authors of a History of Louisiana, etc., does not spell his name "Guyarré," but Gayarré. "D. Le Furber" will hardly know himself under his Frenchified agnomen.

But this transcription of *Corrigenda* is an ungracious and seemingly invidious business. We know well that the proof-reader's office is a difficult as well as a responsible one; that, however varied and accurate his learning, it not seldom falls short of the demands of his "proof;" we know something, too, of the perversity of types. Long ago we ceased to look for absolute perfection in any thing that falls from a printing press. The editor of this work has doubtless, since its publication, discovered ten errors where we, in a hasty examination, have noted one. The *errata* given above are our contribution to a revised edition.

"THE GREAT EVENTS OF HISTORY."⁽¹⁾—It was a happy conception to give to the American schools the estimable book of Dr. Collier, of Trinity College, Dublin. In this act and its implied labors, we have the judgment of a teacher of scholarly acquisitions, and long and successful experience. But while he has given the work of Dr. Collier, as regards its subject matter, intact, the book is increased in size, and enhanced in worth. The work is carried further back, and also brought forward to the present time. This has given to the book that completeness which was wanting in the original. Of the work of the editor in amending this defect, and in which he becomes a co-author, we are compelled to speak in great praise. It is easily seen how great was the difficulty of compressing the ancient story from Genesis to the dawning of the Christian era, in a style and spirit worthy of being the porch to this beautiful structure of Dr. Collier; and then of adding, without distraction of method, to the edifice, the American history, with its Indian wars, and its

(1) THE GREAT EVENTS OF HISTORY FROM THE CREATION OF MAN TILL THE PRESENT TIME. By William Francis Collier, LL.D., Trinity College, Dublin. Edited by an experienced American Teacher.

three notable conflicts; also the astonishing story of the late gigantic strife in Europe. In a book of history intended to be read by youth for an educational purpose, the Scylla and Charybdis are thus defined—an effort to be concise almost inevitably runs into that sort of condensation which becomes repulsive and dry as an anatomy of mere bones—while an attempt at judicious enlargement is almost sure to beget a book whose obesity is repellant to the average youthful mind. In an age where intellectual activity is so unquestionably on the increase, there is no prospect of lessening the oppressingly great number of studies at present exacted of our youth. Nay, does not the exaction of progress speak contrariwise? Such being the truth, the necessity is imperious for that happy mean, neither skeleton, nor obese, but the trim and compact—muscle, and sinew; for time is everything in this period of pupilage. And it is such a book, and only such, as becomes rememberable, and that because it is attractively readable, and really enjoyable. It must, we think, be conceded, that we cannot engraft on the school-boy mind, as a ready aid to the memorial processes, any of those artificial methods, embraced in mnemonic chronologies. Each step is hard and obdurate as an algebraic formula. By the youthful mind the achievements of the past are seen through the glamour of romance. It is, after all, the most deftly done, when the Child Fancy, like a gentle sprite, impresses on the memory historic deeds and dates. You must give a boy either skeleton annals, as a task of dry details to be memorized, (a great strain on weak timber), or put before him the pleasanter form of an interesting narrative, worthy to be called History. And why not? Is not such a course the natural, therefore the true method? Let the concoction be true as to its ingredients, and yet of a pleasant, because skilful compounding. Thus done, what should hinder that the young mind take to it naturally as he does to his Robinson Crusoe, simply because the story is so naturally told? Pleasant reading, and of easy remembrance—that is the problem.

To our mind, this book of Dr. Collier, as now furnished by its American editor, seems to approach as near perfection as we may expect. The editor, in his extracts from the

sacred records, has studiously preserved that literalness of meaning which is held so dear by the Church Universal, but which rationalism has so ruthlessly attacked, and which some of the constructions of the modern science have, we think, needlessly sought to impugn. We notice, too, that Dr. Collier has given, with strict fidelity, some of those dear old episodes which modern historians are aiming to convict as myths. The story of Gessler and Tell, albeit a Swiss scholar has lately had the courage to deny the existence of these personages, is again told with artless effect.

The book is, indeed, a marvel of simple and straightforward interest; and that must be a very dull youth of either sex, that could read these "Great Events of History" in a listless mood. There is much philosophy in the curt phrase, fast becoming a proverb—"All depends on the way you put a thing." Now this pleasant story of the life of humanity as shown in this threading together the memories of the peoples, is very happily "put." And there should be mentioned the neatness and exquisite chasteness of the style of both author and editor. Though sometimes a little ornate, it is never turgid—though often rapid, it is always clear—though there is much simplicity, it is always elegant. And yet, this little book is not in any sense the off-throe of an inspiration. *Ars est celare artem.* The Horatian maxim is perceptible all along like the golden thread in the loom. As a constellation may cluster around "a bright particular star," so each section of this stirring story groups its facts around some one great historic event. And how easily may this event be used as a central mnemonic thought, around which, after the class has read, the teacher can throw his questions, testing how well his pupils may have comprehended, and retained the subject matter of the portion gone through.

In a word, with great sincerity we hail this book as an acquisition to teachers, and a real boon to American youth; and we think, that so far as it is possible, the great *desideratum* of changing from an unwilling task to a pleasant exercise, the study of general history, is hereby achieved.

DR. MURRAY proposed to furnish a text-book and a

Manual for Land Surveyors,⁽³⁾ and it is a pleasure to see that when that end was accomplished he stopped. There is no necessity to apologize for the "unexpected length," etc. The author is not only thoroughly posted on his subject, but understands, from his long experience as a college professor, how to teach others. His desire for clearness has, however, led him into some errors. For example, we think the whole chapter on Plane Trigonometry might be omitted with advantage. It has no proper place in a manual of land surveying. It is a subject which students understand before they come to the study of surveying. It will, of course, benefit those who have never been through college, or who have grown rusty. Text-books should be as concise as is consistent with thoroughness. Twelve chapters on twelve different subjects follow the book on Trigonometry. In a work of this character there is little scope for originality. Excellence consists in wise selection and arrangement, and in a clear presentation of subjects. The merits of the Manual of Land Surveying, in this respect, entitle it to the highest place among works on this branch of mathematics.

THE ENGLISH GRAMMAR AND READING BOOK, by the Rev. O. W. Tancock, M.A. Macmillan & Co. Is divided into four parts—an Introductory Chapter, Grammar, Extracts, and Glossary. The first gives an interesting account of the development of the language. The Grammar is good; the Extracts are judiciously selected, and the Glossary has been prepared with care. A very objectionable feature is the catalogue of Macmillan & Co., ninety-four pages in length, which lumps up the book.

WE have received from Messrs. Harper & Brothers, "Journalism in the United States from 1690 to 1872," by Frederick Hudson. The author's large experience in connection with the Press has fitted him to write intelligently on this subject. The book before us is a most complete account of the rise and progress of journalism in the United States. From the same house we have received—

(3) MANUAL OF LAND SURVEYING, WITH TABLES. By David Murray, A.M., Ph. D., Professor of Mathematics in Rutgers College. New York: J. W. Schermerhorn & Co., 1872.

"The Wandering Heir," by Charles Reade, and "An Only Sister," by Madame Guizot De Witt.

SANFORD'S COMMON SCHOOL ANALYTICAL ARITHMETIC. J. B. Lippincott & Co. The idea of this book is to take the pupil by easy stages from Numbers to Mensuration. The first examples are easy and clearly expressed, the latter more difficult, but still clearly enunciated. They are difficult practical questions, not puzzles. We do not mention this feature as peculiar to this one arithmetic. Several now before the public possess the same advantage. It is, however, an excellence which deserves recognition.

MISCELLANEA.

PROF. DAVID MURRAY, Ph. D., of Rutgers College, New Brunswick, N. J., is offered the Commissionership of all the affairs of Schools and Colleges in the Empire of Japan. If he concludes to accept, we shall congratulate the Japanese Government upon the wise selection.

A CIRCULAR advertising a new book published by a New York house, mentions the late war as the "American War of the Rebellion." The Principal of a Southern college takes offense at this and writes: "I can assure you that if the late war is styled the American Rebellion, as it is termed in the circular, you need not look for the introduction of the work in many schools south of Mason and Dixon's Line. It is high time such nonsensical phraseology was done away with, as some publishers have already discovered." The author of the obnoxious work has, we are sure, no desire to perpetuate unpleasant feelings between the South and North, but history cannot be written to suit the prejudices of a section. We believe that the large majority of Southern people prefer historical accuracy to a mere quibble on words.

IN an article on Venice an exchange remarks—"It is strange that they have no horses." It would be much stranger if they had, for in many streets the horse would

stick fast between the houses. It would be uncomfortable for a foot-passenger to meet an equestrian in a spot so narrow. The American Consul (it is spelled Counsel) in Venice would be surprised to learn from the same article that he keeps a horse, which is looked upon as a wonder. He probably takes him in a gondala to the main land and has a gallop. We also learn that the Bridge of Sighs is attached to St. Mark's Cathedral. Why cannot people write on subjects they know something about? or, if they must write from books, let them copy word for word and not introduce nonsensical remarks.

DR. HENRY SCHLIEMAN has been exploring the supposed site of ancient Troy, and has discovered at various depths below the surface remains of pottery, houses, and masonry, which indicate that he has at last got upon the very ground where the most intensely interesting events described in Homer's Iliad took place. The base of a tower forty feet in thickness has been discovered, which Dr. Schlieman thinks may have been the very one from whence Andromache witnessed the death of noble Hector.

IN a lecture on ventilation, lately delivered before the Franklin Institute, Mr. L. W. Leeds, after detailing the abominations he encountered in his examination of the ventilating arrangements of the Treasury Building at Washington, gives the following practical directions concerning provisions for ventilation and warming in the construction of buildings. First, never have long underground fresh-air ducts. Second, never allow a sewer, soil-pipe, foul-air flue, or smoke-flue, to come near the fresh-air supply-flue, for fear of some connection being made between them by carelessness or accident. Third, never heat a building exclusively by currents of warm air. Fourth, always put the heating-flues on the outside wall instead of on the inside walls. Fifth, avoid making the fresh-air chamber a common receptacle for all the rubbish of a filthy cellar.—*Popular Science Monthly*.

THE annual cost of the clergy in the United States is \$12,000,000: that of the criminals \$40,000,000: the lawyers cost \$70,000,000, and \$200,000,000 is spent for rum.

AMERICAN EDUCATIONAL MONTHLY.

MARCH, 1873.

EMINENT TEACHERS DECEASED IN 1872.

OUR record commences on the 2d of January, 1872, with the name of ARTHUR SAVAGE TRAIN, D.D., an able and successful teacher, though his true vocation was that of the pulpit. Dr. Train was born in Framingham, Mass., September 1, 1812, received his early education under his father's tuition, (the father was a graduate of Harvard and a profound scholar,) and his collegiate instruction at Brown University, whence he graduated in 1833. From 1834 to 1836 he was tutor in his *Alma Mater*, and then was ordained and settled as pastor of the First Baptist Church in Haverhill, Mass., where he remained for more than twenty-three years, winning a high reputation for scholarship, eloquence and pastoral ability. In Nov., 1859, he was elected "Professor of Sacred Rhetoric and Pastoral Duties" in Newton Theological Seminary, Mass. He fulfilled the duties of his professorship with rare ability and success for seven years, but at the end of that time returned to the pastorate with evident satisfaction.

On the 3d of January, at Adrian, Michigan, died NATHAN BRITTAN, a native of Spencer, Mass., born Sept. 2, 1808, educated at Hawley Academy, Mass., and at Brown University, graduating from the latter in 1837. Immediately

after his graduation he entered upon the profession of teaching, being for some years associate principal of the Collegiate Institute at Rochester, with the distinguished Prof. Chester Dewey. From thence he removed to Lyons, N. Y., and some years later to Adrian, Mich., where he made his home for the remainder of his life. He continued teaching till 1852, having a high reputation both for general ability and for his special skill as a chemist and physicist. As a result of a long continued course of experiments on electricity, he devised in 1852 a form of lightning rod now known as the "Continuous Copper Strip," and, for twenty years the greater part of his time was given to the explanation, introduction and manufacture of his invention.

HENRY DAGGETT BULKLEY, M.D., who died in New York city, Jan. 4th, at the age of 69 years, was rather a physician and author than a teacher, though he gave several courses of lectures in the College of Physicians and Surgeons on his specialty of Cutaneous diseases, and was a very admirable clinical lecturer at the New York Hospital and the Dispensaries. He was born in New Haven, graduated from Yale College in 1821, and received his M.D. in the Medical School of that College in 1830, subsequently studying his profession in Europe. His life after 1832 was spent in N. Y. city.

Rev. PERKINS KIRKLAND CLARK, who died the same day at Charlemont, Mass., at the age of 61 years, was not, except in the earlier portion of his career, a professional teacher. Graduating from Yale College in 1838, he had already had some experience as a teacher, and for two years following his graduation he taught in Savannah. In 1842, while connected with the Theological Seminary at New Haven, he was appointed a tutor in Yale College, and remained in that position till 1845. He then taught for a year in the Normal School at Westfield, Mass., and in Aug., 1846, was ordained as a Congregationalist minister. He did not subsequently engage in teaching, but took a deep interest in the promotion of education.

It would hardly be fair to count Major-General H. W. HALLECK (died Jan. 9) in our list of eminent teachers de-

ceased, on the strength of his single year's professorship at West Point (1839-40), and ISAAC RICH who died in Boston Jan. 13, and WILLIAM KELLY, of Rhinebeck, N. Y., who died at Torquay, Eng., Jan. 14, were noble benefactors of education, (Mr. Rich to the extent of more than a million of dollars) but not themselves teachers. We pass them, to Rev. ALEXIS JOSEPH ELDER, a Roman Catholic priest and professor, died at Baltimore, Jan. 19, who was for fifty years connected, in various capacities, with St. Mary's College and St. Mary's Seminary of the order of St. Sulpice, in Baltimore.

On the 5th of February, Rev. GEORGE W. THOMSON, long a teacher in Central and Western New York, died at Buffalo, N. Y., in the sixty-first year of his age. Mr. Thomson was born near Clinton, N. Y., graduated from Hamilton College in 1833 and from Auburn Theol. Seminary in 1837, was ordained in 1838, but after a brief pastorate was compelled by ill health to turn his attention to teaching. For more than ten years he was a popular and successful teacher, devoting himself with unwearying assiduity to his work. Then again he was compelled to change his calling in consequence of ill health, and engage in a business which would take him into the open air.

We can hardly suppose that the venerable ARCHBISHOP SPALDING, of Baltimore, who died Feb. 7, at the age of 62, ever purposed to follow teaching as a profession, but his reputation for profound and elegant scholarship was so high that on the decease of the President of St. Joseph's College, Bardstown, Ky., in 1835, he was called to take his place, although then but twenty-five years of age, and he performed its duties with signal ability for eight years.

On the 14th of February, died Prof. CHARLES ALFRED LEE, M.D., at Peekskill, N. Y., aged 71 years. Prof. Lee was a native of Salisbury, Conn., born March 3, 1801, graduated from Williams College in 1822, and from the Berkshire Medical School in 1825. In 1826 he came to N. Y. City, and in addition to his private practice, which at one time was large, he has edited and written many valuable medical and scientific works, founded the Northern Dispensary in

N. Y. City, and in the course of forty years was professor (usually of *Materia Medica* and therapeutics) in the following Medical Schools and Colleges: Medical Department University of New York; Do. of Bowdoin College, Brunswick, Me.; Berkshire Medical School, Pittsfield, Mass.; and the Medical Colleges at Geneva, N. Y., Woodstock, Vt., Columbus, Ohio, and Buffalo, N. Y. He was Emeritus Professor of the last at his death. Perhaps no medical professor in the country has had a larger number of young men under his instruction than Professor Lee.

DANIEL TREADWELL, A.A.S., one of the ablest scientists and technologists in the United States, and for eleven years Rumford Professor of technological Chemistry in Harvard College, died in Cambridge, Feb. 27, aged 81 years. He was born in Ipswich, Mass., in 1791, early manifested a passion for mechanics and practical science, and before his 30th year had invented a machine for making wood-screws and a power printing press. In 1822, he and Dr. John Ware established and conducted the *Boston Journal of Philosophy and the Arts*. His inventions continued to be numerous and of great value, and in 1834, as the most eminent disciple of Count Rumford, he was elected Rumford Professor of Applied Sciences and the Arts in Harvard College. He held this professorship for eleven years, and then resigned to enter upon the manufacture of cannon, by an improved process of his own invention, for the government.

On the 1st of March, died THOMAS RUSSELL CROSBY, M.D., at Hanover, N. H., aged 55 years. He was a son of Prof. Dixi Crosby, of Dartmouth College, Medical Department, and graduated both from that College and the Medical School in 1841. Not long after taking his degree he was called to the Medical Department of the Norwich University, Vt., first as Adjunct and soon as full professor of Anatomy, Physiology and Natural History. He held this position with great ability for nearly twenty years, and then returned to his practice at Hanover.

Rev. JOHN METCALF GARFIELD, who died in New Haven, Conn., March 10, at the age of 82 years, had spent thirty-two years of his life in teaching; and, indeed, had been in

some sense the instructor of a humble and ignorant class for twenty-three more. He was born in Grafton, Mass., July 21, 1790, graduated from Yale College in 1816, commenced the study of law, but soon turned his attention to teaching, and in 1817 became a teacher in Lansingburgh, N. Y., in 1818 principal of the Troy Grammar School, and in 1819 founded a Female Seminary in New Haven, Ct., of which he was the successful principal till 1831, when he was appointed Principal of the Albany Female Seminary, in which he remained till 1849, when he resigned and returned to New Haven. In 1823 he had been admitted to the priesthood in the Episcopal Church, and after his return to New Haven he had charge, as pastor and teacher, of a church of colored people in that city.

On the 26th of March, Mother MARY ROSE, (Gauthreaux) Superior Vicar of the Western province of the Order of the Sacred Heart of Jesus, a conventual order of philanthropic teaching and Missionary service, died in Chicago, Ill., aged 47 years.

SAMUEL HENRY DICKSON, M.D., LL.D., who died in Philadelphia, March 31st, in the 74th year of his age, had been for nearly fifty years a medical professor. He was born in Charleston, S. C., Sept. 20, 1798, graduated from Yale College in 1814, studied Medicine in Charleston, and practised there during the terrible epidemic of yellow fever in 1817, subsequently prosecuted his studies in Philadelphia, and took his medical degree there in 1819. In 1823, he commenced lecturing before the physicians and medical students of Charleston on physiology and pathology; in 1824, was called to the Chair of Institutes and Practice of Medicine in the New Medical College there, which he had helped to found. In 1832 he resigned, but on the reorganization of the Collège in 1833 he was reelected and continued there till 1847, when he was called to the Chair of Practice of Medicine in the University of the City of New York, but in 1850 his health obliged his return to his former post. There he remained till 1858, when he was called to the Chair of Practice of Medicine in the Jefferson Medical College, Philadelphia, where he continued to lecture until his

death. Dr. Dickson was the author of several medical and other works, which indicate talent of a high order.

Rev. LEMUEL FOSTER, who died at Washington Heights, Ill., on the 1st of April, in the 73d year of his age, had been very active for many years in founding Academies, and at times in teaching in them, in Central Illinois, for nearly forty years. He was a graduate of Yale in 1828, and of the Yale Theological Seminary in 1831.

Rev. THOMAS COGSWELL UPHAM, D.D., LL.D., celebrated alike as a professor, philosopher and author, who died in N. Y. City, April 2d, at the age of 73 years, had passed very nearly fifty years of his life as a teacher. He was born in Deerfield, N. H., Jan. 30, 1799, graduated with high honors from Dartmouth in 1818, and from Andover Theol. Seminary in 1821. He was immediately employed at Andover as teacher of Hebrew, and in July, 1823, ordained as colleague pastor at Rochester, N. H., whence he was called, in Sept. 1824, to be professor of Mental and Moral Philosophy and Lecturer on Biblical Criticism, in Bowdoin College, Brunswick, Me. He filled this Chair with great acceptance till 1867 (forty-three years) when he resigned, and was appointed Professor *Emeritus*, but continued to give occasional lectures till a short time before his death.

April 5th was a fatal day for teachers; on that day died ZINA PITCHER, M.D., an eminent physician of Detroit, Mich., who had been for many years a professor in the Medical Department of the University of Michigan, at Ann Arbor, and who possessed rare abilities as an instructor; SAMUEL JACKSON, M.D., LL.D., who died in Philadelphia, aged 85 years, Emeritus Professor of the Institutes of Medicine in the University of Pennsylvania, and from 1835 to 1863, active professor of the same department, as well as an author of great ability; and Hon. SAMUEL GALLOWAY, of Columbus, Ohio, who died at the age of 61 years, who, though honored and trusted as a member of Congress and Secretary of State for Ohio, yet derived his highest honor from his labor as a teacher, and professor in Miami University and Hanover College, Indiana, for five years; from his position as President of the Ohio Teachers' Association, and from

his earnest efforts in the promotion of education during his term of service as Secretary of State.

JOHN T. WALSHE, who died at Mobile, Ala., on the 7th of April, aged 58 years, was a native of Ireland, a graduate of Trinity College, Dublin, and a man of elegant scholarship, who came to this country in 1836. Twenty-three years of his life were spent in journalistic and literary pursuits, but for twelve years he was professor of Ancient Languages and Literature in Spring Hill College, near Mobile.

Rev. CHANCELLOR HARTSHORN, who died April 9th, at Ann Arbor, Michigan, aged 71 years, had been, soon after graduation, some three years a professor in the Hamilton, Literary and Theo. Institution, now Madison University.

Rev. A. M. POINDEXTER, D.D., an eminent Baptist clergyman of Virginia, who died April 14, near Gordonsville, Orange Co., Va., was not only an elegant and popular preacher, and active in all good enterprises, but was one of the founders, and for some years professor in Richmond College, Va., to the prosperity of which he devoted his highest efforts.

ANN PRESTON, M.D., who died in Philadelphia, April 18, at the age of 58 years, was not only remarkable for her skill as a physician and her ability as a writer, but for having been for eighteen years Professor of Physiology and Hygiene, and Dean of the Faculty of the Woman's Medical College of Philadelphia. Her lectures and teachings were very able and would not suffer by a comparison with those of any professor of the same topics in Philadelphia.

Rev. CHARLES RUSSELL CLARKE, who died the same day at San Diego, California, at the age of 40 years, had employed fourteen years of his brief life in teaching. He graduated from Princeton College in 1852, and taught in Newtown, L. I., Geneseo, N. Y., as tutor for three years in Princeton, and as private instructor in Com. Stockton's family, and from 1861 to 1869, in San Francisco, as Principal of a Female Seminary there. He was an enthusiastic and successful teacher.

Though an earnest and zealous friend of popular educa-

tion, Rev. GEORGE B. IDE, D.D., who died at Springfield, Mass., April 16, at the age of 66, could hardly be recognized as a professional teacher. He had, indeed, taught for one or two years after graduating, and successfully, and few men have done more to promote thorough education.

April 27, died NATHANIEL F. MOORE, LL.D., at his home on the Highlands, in the 90th year of his age. He was born at Newtown, L. I., Dec. 25, 1782, graduated from Columbia College in 1802, was admitted to the bar in 1805, appointed Adjunct professor of Latin and Greek Languages and Literature in Columbia College in 1817, was professor of the same studies from 1820 to 1835, librarian from 1837 to 1842, and President of the College from 1842 to 1849. He was the author of several valuable scientific works, and of an historical sketch of Columbia College. He was a very thorough and profound scholar.

JACOB HARDENBERGH, who died at Albany, April 29, aged 49 years, a State Senator, would have been a capital teacher had he not suffered himself to be drawn away from that work by the attractions of political life. His three or four years of teaching at the Academy in Fonda, Montgomery Co., N. Y., in 1844-48, while he was preparing to enter the legal profession, left an impression of capacity, ability and thoroughness, which have remained as one of the traditions of the town for a quarter of a century.

Of EDWARD BARRY DALTON, M.D., who died at Santa Barbara, Cal., on the 13th of May, at the age of 39, the little we know only inspires a desire to know more. He was educated at Harvard College, whence he graduated in 1855, and after devoting some time to Scientific studies, turned his attention to the Medical profession and took his degree as M.D. from the College of Physicians and Surgeons, N. Y., in 1858. Like his illustrious brother, he was an earnest student of science; he served as Surgeon and Medical director during the war from April 30, 1861, to May 13, 1865, and at its close commenced a career as Medical Lecturer and instructor, and prepared two or three very excellent text-books; but his health, which had been impaired by his army service, continued to fail, and though he resorted too

late to the balmy air of Southern California, he fell a victim to consumption.

On the 15th of May, died THOMAS HASTINGS, Mus. Doc., at the venerable age of 88 years. For nearly half a century he had been an active and efficient teacher of Sacred Music, and the author of more books of instruction in that science, and more collections of religious music, than any other musical writer, with possibly a single exception in the United States.

Rev. ALBERT HOPKINS, LL.D., A.A.S., F.R.S., who died at Williamstown, Mass., May 24, aged 65 years, was one of those teachers whose loss falls heaviest on those who remain. Modest, gentle, unselfish, and never apparently conscious of his own rare abilities and attainments, he was yet a model teacher. Thoroughly versed in the whole realm of mathematical and astronomical science, he possessed also the skill to rouse the enthusiasm of his pupils and lead them, without faltering, along those steep and slippery heights, which he had already trod. Prof. Hopkins was born in Stockbridge, Mass., July 14, 1807. He was fitted for College at the Stockbridge Academy, and graduated from Williams College, in 1826, with high honors. In 1827 he was recalled as tutor, and in 1829 appointed professor of Mathematics and Natural Philosophy; in 1838, this was exchanged for the Chair of Natural Philosophy and Astronomy, and a few years since, on the foundation of his classmate, David Dudley Field, he became Memorial Professor of Astronomy. His whole term of service as a teacher in this College was forty-five years. In 1869 he was elected a Fellow of the Royal Society, London, an honor conferred in our time only upon one other American. With his other duties, Prof. Hopkins was also acting Pastor of the College Church, and his duties growing out of this relation were admirably performed, and in them his loss will be deeply felt.

THE gaining of reputation is but the revealing of our virtue and worth to the best advantage.

A SEASONABLE TALK WITH TEACHERS.

SCHOOL ROUTINE—STUDIES TOO ADVANCED FOR THE PUPIL—WORDS
IN PLACE OF THINGS—THE NATURAL METHOD—VALUE OF
NATURAL HISTORY—OBJECT LESSONS IN BOTANY.

BEFORE many weeks the district schools will have opened again for the summer term. The children will gather once more to resume the invariable round of reading, writing, geography and arithmetic. It is the same old story, term after term and year after year; and it is no wonder that even bright boys and girls sometimes find it a dull routine. Especially is it so when the school-ma'am simply "keeps" school and "hears lessons" without *teaching* at all. Not that the keeping and the lesson-hearing are not a part of the teacher's duty; but we mean to imply that they do not constitute the whole of it,—that both these things combined do not make the *teacher*.

When we consider how much time is devoted to the two staple studies, arithmetic and geography, and yet how poor a training and outfit in them is actually furnished in most schools, we are disposed to inquire if a better use cannot be made of a portion, at least, of the time usually assigned to them. It is just possible that geography is introduced too soon—that is, geography as generally first presented, in a text-book; and also that the processes of logical arithmetic—ciphering and the rest—find place at too early a point in the educational course. Certainly the average outcome seems slight, when we consider at what an outlay of time and labor it has been produced. It is safe to say that both these branches could be deferred for two years, and grammar for a still longer period, and yet the pupils be furnished, at the age of fifteen, with a fuller and more scientific and more usable knowledge of all three than they now possess. The poverty of results accruing from our schools, as now managed, is due partly to false and unproductive methods of instruction, but partly also to the fact that the fit time for beginning these studies is unwisely anticipated. Weariness and disgust are the too frequent results of the effort to force the infant mind. Unable to grasp the subjects presented, getting but empty words in place of ideas, failing to

get through the husk to the kernel, it conceives an indifference or an aversion to the uncomprehended science that seldom, often never, wears wholly away.

But what does the ordinary graduate of the public school—say at fifteen years—know of the world in which he finds himself? How unskilled he is in the “three R’s,” everybody can testify. He finds himself surrounded with countless objects of sight and touch, with most of which he has but the slenderest acquaintance. The curiosity that was so quick and restless at the age of five, is now languid, listless, all but dead, repressed by the artificial drill of the school-room. Before the school seized upon him he was ever on the alert; all eye, all ear; experimenting with touch and taste; by actual trial solving his own questions so far as he was able; and puzzling his elders by his incessant *What and How*.

He was working out his own education hour by hour, getting a wider knowledge of *things*, and by contact with things constantly developing and strengthening his powers. What knowledge he gained was first-hand; it was his own. It was *real* knowledge; that is, knowledge of realities, and no mere *say-so* of book or teacher. He understood as far as he went, and went just as fast as he understood. His parents may have thought he was wasting his time; but he was learning faster and more thoroughly—we are sure of it—than after he came under the hand of the professor of A B C. Under the guidance of his five senses, he learned facts; or if he did not, he was in the way of correcting all his errors. At school he got signs and symbols, whose use and meaning were but dimly perceived. He ceased gradually to learn from things, and came more and more to trust to books. The sun rose in the east, for “the book said so.” In an arithmetical computation he multiplied or divided, because “the rule said so.” If he wished to know how many bones there were in his hand, or how many legs a fly had, he looked in a book to see. He had become the slave of the book. He had ceased, in a great measure, to use his own eyes and his own judgment, and had come to mistake words for things, and sentences for truths. In the school-room his self-reliance, his mental independence, dwindled away; and

his knowledge—and so his power—was conditioned on what he could *remember* of his lessons and rules.

This representation may seem unfair and one-sided. We could wish there were no grounds for it. We know there is a general movement in the educational world toward better methods,—methods in conformity with the nature both of the child and of things—methods that are designed to stimulate and guide the native curiosity of the live, irrepressible, often puzzling and unanswerable, little interrogation point. But we know, too, that this change is working but slowly in the schools of many sections of the country,—that the old ruts are deep and hard to leave; that the old traditions have a firm and tenacious grip on all, or nearly all, our primary school teachers. They may not be satisfied with the ways they follow, but they know, and so can employ, no other. Should they leave the beaten path, they would be utterly at sea. Besides, new ways would require thought and study. Better methods might necessitate some work on their part. This consideration, however, will stumble only those who ought never to have thought of school work—not the true *teacher*, her who is “called” to this high office. To such one we have a suggestion to make.

By the time your school opens, spring will have come in good earnest. The earth will be covered with plants and flowers; the air be full of birds and insects. Why not take up some department of Natural History? You may not be versed in any branch of it, and so hesitate to make the attempt. Never mind; can you not learn? Do you not know at least as much about it as the ten-year-olds, and can you not learn as fast as they? Suppose you choose Botany,—on the whole, perhaps, the best branch for the experiment you would make. No matter if you cannot tell a stamen from an axil, an anemone from a pitcher-plant. We may learn by teaching, you know. Get a copy of Miss Youmans' *First-Book of Botany* [D. Appleton & Co., N. Y.], a *system* of object lessons, the most suggestive and helpful book for beginners [say pupils from six to ten years old] that we have yet seen. Read her very sensible preface and suggestions to teachers; examine the numerous illustrations and accompanying schedules; note how gradually and with what or-

derly sequence she develops the elements of the science, without confusion, or mixing of vegetable physiology; see how in the examination of leaf, stem, flower and root successively, she exercises and trains the powers of observation, so alert at this age, but which the old method neglects; and then ask yourself if you cannot work so simple, so practical a scheme. We make no question that your pupils would rejoice in it, that your own enthusiasm would be kindled by it, and that the plant lessons would be among the most useful, as they would be sure to be the most delightful of the whole term.

Our reasons for giving this advice we cannot state here, but happily there is little need, for you will find a capital discussion of the whole matter in an essay at the end of the book, which we wish every teacher might read, mark, and inwardly digest. This essay alone is worth the price of the book. By the time the summer schools of 1873 open, we hope the author will have the second book ready, so that you and your classes may go on under her direction. Meanwhile, without waiting for that, get Prof. Gray's little volume, *How Plants Grow and How Plants Behave*, and prepare yourself to answer the thousand questions which your children will ask you day by day. If, faithfully following this advice, you fail of success, we hereby engage to buy again of you, at the end of the summer term, your copies of Prof. Gray's and Miss Youmans' books, and pay full price therefor.

A LITTLE island in the Connecticut, at Woodville, is a piece of patchwork so far as geography is concerned. The Vermont and New Hampshire State line runs through it. Grafton, Caledonia and Orange counties corner there, and also the towns of Bath and Haverhill, in New Hampshire, and Ryegate and Newbury, in Vermont. One can sit down at a certain point on that island and be in two States, three counties, and four towns at the same time—that is, if he gets exactly on the “certain point.”

THE Bible which John Bunyan used in Bedford jail has been brought to this country by Hon. Charles Sumner.

GEOGRAPHICAL NOTES.

UNITED STATES.—The Paris *Tour du Monde*, relying on certain Canadian journals, greatly exaggerates the emigration from Lower Canada to New England. Thus, it reckons the French Canadians in Massachusetts at over 50,000, whereas, according to the last census, there were in that State but 38,689 Canadians (whether French or English). In like manner, Fall River is credited with 7,500 instead of only 1,129; Lawrence with 1,500, instead of 1,306; Lowell with 3,700 instead of 2,620. Cowley, in his "History of Lowell" (Boston, 1868), describes a procession of over twenty-five hundred factory girls, "clothed in white" and looking "like liveried angels," which took place in 1834, and greatly impressed M. Michel Chevalier, who happened to witness it during his visit to this country. In 1861, Prince Jerome Napoleon found "their places filled by a motley crowd of Americans, English, Scotch, Irish, Dutch, and French Canadians, who were hardly likely to arouse that exquisite poetic sentiment which Chevalier felt for the factory girls of 1834." Vermont, from its position on the border, naturally stands next to Massachusetts, having 28,544 Canadians. New Hampshire has 11,901; Connecticut, 10,056; Maine, 9,410; Rhode Island, 8,933.

—Before leaving the subject of our composite population, let us note that a correspondent of the *Eco d' Italia*, of this city, states that "the Italian population in California and the adjacent States and Territories undoubtedly exceeds 20,000 or even 22,000 souls." They are chiefly peasantry from Liguria, Tuscany, and Sicily—the Genoese (Liguria) outnumbering all the rest. "The number of males is fifteen times that of the females They are generally very industrious and enterprising, and particularly valued as farmers and fishermen—the latter being not few in number." Thousands labor in the mines, and frequently succumb there. Those who betake themselves to commerce for the most part do well.

—Tin forms part of the mineral wealth of California

being found in the lower half of the State. The San Jacinto tin estate is in San Bernardino County, about 50 miles east of Los Angeles, where, it is said, the Company have fifty tin-bearing ledges, some of them with the unusual breadth of ore of thirteen feet, bearing 25 per cent. of pure metal. This native product is already used by the type-founders of the State in the composition of their metal.

—The Yo Semite Valley is now declared to have a dangerous rival in the cañon of the Tuolumne River, just explored for the first time by Mr. John Muir. According to the San Francisco *Bulletin*,

“He reports that this cañon lies about eighteen miles in an almost due northerly direction from Yo Semite Valley, and the main Tuolumne runs through it. It curves in an unbroken line for over forty miles, and runs up to and ends in the very heart of the summits of the upper Sierra Nevada. The uneuphoniously named Hetch Hetchy Valley constitutes an expanded portion of the great Tuolumne cañon, which properly begins at the eastern end of Hetch Hetchy, and has, from thence to its head, a length of twenty miles of continuous, unbroken vertical walls of granite, similar to, but more clear cut, and with much greater depth than those of Yo Semite Valley. Yo Semite Valley has an average width of half a mile, and is in one place a mile wide, but the Tuolumne cañon has nowhere a width exceeding a quarter of a mile, and is in some places much narrower than that. The Tuolumne river, which runs through it, has twice the width of the Merced. The falls of the Merced-Yo Semite surpass those of the Tuolumne cañon in unbroken volumes of descending water; but, in endless variety of cascades and water-shoots, the Tuolumne cañon is far superior. The great walls of the cascade are seamed by water-worn fissures, down which rivers leap, churn, thunder, brawl, and sing with all possible varieties and expressions of sound.”

—“Gorges which throw Yo Semite into the shade,” however, appear to be numerous enough in the Far West. The Washington correspondent of the *Cincinnati Gazette* says that such are to be seen photographed in the collection brought back by the Hayden expedition, whose explorations, during the past summer, covered an area of 500 miles along the Rocky Mountain range, southwardly, from near the northern boundary of Idaho, by a width of 130 miles. The region explored in 1871 was east of this. A new geyser basin was discovered at the upper end of Lake Sho-

shone, containing about 130 geysers, of which twenty or thirty are of the largest size. The ornamentation about these springs was thought to be more interesting and elaborate than those in the Fire Hole basin.

"The divide between the Yellowstone Lake and Lake Lewis is fifty feet above the former and about two hundred feet above the latter. From a high mountain above this lake a view was obtained embracing a radius of not less than one hundred and fifty miles, within which four hundred and seventy mountain peaks, worthy of a name, could be distinctly observed. The area which could be swept by the eye from this point, could not be less than fifty thousand square miles, embracing a variety of grand and beautiful scenery, of mountain and valley, probably without a parallel on the continent. Ten large lakes, and many smaller ones, were embraced in the view, and the entire Yellowstone Park spread out under the eye. To the east the Wind River and Big Horn ranges of Mountains, with Fremont's 'Union' and Cloud peaks, bounded the view. On the north the Snowy range, with Emigrant peak, and the loftiest peaks of Montana were readily distinguished. To the west the Salmon River mountains of Idaho only shut out the view, while to the far south the mountains near Fort Hall and the Wahsatch range in Utah completed the mighty amphitheater. The view embraced a large portion of Wyoming, Idaho, Montana, and Utah Territories, an extent which will be difficult of belief to anyone who is a stranger to the singular purity of the atmosphere in high latitudes."

—The last sentence reminds us of what Prof. Young, of Dartmouth, has been doing in the pure atmosphere of the high latitudes. He was attached to the Coast Survey expedition stationed last June at Sherman, the summit of the Union Pacific Railway (Wyoming), between parallels 41° and 42° N., and meridians 105° and 106° W. To establish the exact position of this place (or, technically speaking, its "geographical and topographical constants"), as a reference point and base for all the numerous surveys going on in that part of the country, was the chief object of the expedition. Prof. Young carried with him the Dartmouth equatorial, which was placed in the observatory improvised at a height of 8,300 feet above the sea. Here is his account of some of the gains to science from observations made and to be made on this lofty perch :

"Whenever the sky was unclouded the air was usually of most exquisite transparency. At night multitudes of stars, invisible at

lower elevations, were easily seen; so that it was estimated that nearly all the stars of the seventh magnitude were fairly within reach of the naked eye. For instance, in the quadrilateral which forms the bowl of the 'Dipper,' I could see distinctly nine stars, with glimpses of one or two more, while at home I can only perceive the three brightest of them.

"The power of the telescope was correspondingly increased. Without being able to devote a great deal of time to the stellar observation, I ascertained that, with my $9\frac{1}{16}$ inches of aperture, nearly everything could be fairly seen which, at the sea-level, is within the reach of a 12-inch object-glass.

"But in the use of the spectroscope the advantage was even greater. At Hanover I had been able to make out a list of 103 bright lines in the spectrum of the chromosphere; at Sherman the number was extended to 273; and at moments of unusual solar disturbance there were glimpses of at least as many more."

—Lieut. Wheeler's expedition, of whose proposed operations we gave a summary in our December Notes, reached Washington at the beginning of the year, having been four months absent from Salt Lake City, most of the time in the western and southern portions of Utah. In November they reached Prescott, in Arizona, having crossed the track of Major Powell and his companions on the Colorado at the lower end of the Grand Cañon. A correspondent of the *Boston Advertiser* gives the following graphic sketch of the topography of Utah:

"Upper and central Utah are rich in glorious scenery, lofty, snowy mountains, fair valleys, dotted here and there with towns and hamlets, deep and gloomy cañons, and a climate hard to be surpassed. Descending, however, over the imperfectly defined rim of the Colorado Basin, you enter upon a new region, of different climate, different altitude above the sea, different vegetation, and above all different geologic aspect. Through and across this vast basin we have been traveling almost ever since I wrote you last. Three thousand feet lower than the country above the rim, the vegetation might be expected to be of an almost entirely new zone; and so we found it, making forays rich with loot into the vineyards and orchards of the settlements, eating figs both fresh and half-dried from the same trees, and seeing the almond and other semi-tropical trees in successful growth. For the sage-brush and pines of the north, we rode daily through mile after mile of grease-wood and mesquite, finding abundant yuccas and cacti as we drew nearer to the Colorado. But however changed were the climate and vegetation, the altered character of the scenery was the most noticeable feature of the lower country.

For we had descended into the vast network of cañons belonging to the Colorado's tributaries. . . . From the rim of the basin we had a comprehensive view of this much-convulsed and eroded country, and, descending into it, found ourselves winding again and again through stupendous cañons, here several rods only wide, and there stretching till they almost lost the name of cañons and became valleys. Nestling in these valleys, bathed in the balmy atmosphere of the region, and meeting us unexpectedly as we rode along the rolling country roads, were the cozy towns of this occidental 'Dixie,' as the southern end of the territory is called." =

Of the grand cañon the same writer speaks in these admiring terms :

"No words of mine, drawn from so slight an acquaintance, can give you an adequate conception of the vast scale and imposing wonders of this river and this marvellous cañon : the perpendicular walls rising at one bound thirty-five hundred feet in the air ; the castellated and columnar structure at the entrance of the cañon, where twin towers stand at enormous heights, as though forbidding passage with Titanic prohibition ; the swift river, pent here and there within narrow walls, and roaring with hoarse rage over frequent rapids, gliding out in other places with placid current but with immense power into broad lake-like expanses, where swimming against it would appear the easiest matter in the world, if you had not tried it ; and around and above all, the soft, slumbrous air of this wonderful climate, tender as a dream of love, filling the far-off windings of the cañons with purple glory, a royal color, and toning the harshness of near foothills of barren rock and glaring sand into a soft indistinctness akin to beauty."

AFRICA.—Sir Bartle Frere has reached Zanzibar. Ad-
vices received at that place to the 30th of November, 1872,
state that Dr. Livingstone had written from Unyanyembe of
the arrival of the expedition with supplies despatched by
Stanley before the latter left for England. Thus equipped,
the Doctor had started again for the interior on the 18th of
August. That life at Unyanyembe is not so outlandish as
the name of the place, the reader of Stanley's "How I Found
Livingstone" discovers, perhaps with some surprise :

"At Tabora" (another name for Unyanyembe, which really consists of three neighboring settlements,) says he, pp. 264, 265, "they live quite luxuriously. The plain on which the settlement is situated is exceedingly fertile, though naked of trees ; the rich pasturage it furnishes permits them to keep large herds of cattle and goats, from which they have an ample supply of milk, cream, butter and ghee. Rice is grown everywhere, sweet potatoes, yams, muhogo, holcus

sorghum, maize or Indian corn, sesame, millet, field peas or vetches, called choroko, are cheap, and always procurable. Around their tembes [houses] the Arabs cultivate a little wheat for their own purposes, and have planted orange, lemon, papaw, and mangoes, which thrive here fairly well. Onions and garlic, chilies, cucumbers, tomatoes, and binijalls, may be procured by the white visitor from the more important Arabs, who are most undoubted epicureans in their way. Their slaves convey to them from the coast, once a year at least, their stores of tea, coffee, sugar, spices, jellies, curries, wine, brandy, biscuits, sardines, salmon, and such fine cloths and articles as they require for their own personal use. Almost every Arab of eminence is able to show a wealth of Persian carpets, and most luxurious bedding, complete tea and coffee services, and magnificently carved dishes of tinned copper and brass lavers. Several of them sport gold watches and chains, mostly all a watch and chain of some kind. And, as in Persia, Afghanistan, and Turkey, the harems form an essential feature of every Arab's household."

ASIA.—In the northeastern part of Hindostan is the province of Assam, through which flows the Brahmaputra. Among the mountain ranges in its southern part dwell the Nagas, concerning whose country a recent English traveler, Mr. S. E. Peal, says that one finds there villages situated within sight of each other whose inhabitants cannot understand one another, owing to radical differences of speech. Each of these wretched tribes regards itself as the most powerful people in the world, and the humblest member of the lowest one of them smiles disdainfully at mention of the English. They believe themselves invincible because they have in night attacks depopulated all the country to the south of the Brahmaputra. Naturally enough, their religion seems to consist wholly in the fear of devils (*deotas*). The several tribes differ unmistakably from each other in appearance and physique, as well as in their modes of tattooing, by which social rank is indicated among them.

Bibliography.—Appletons' Hand-book of American Tour. Southern Tour. New York: D. Appleton & Co. 1873. (Contains general and special maps.)—BOYLE, FREDERICK. To the Cape for Diamonds. London, 1872. (See notice in *Athenæum* of Dec. 21.)—DE CARNE, LOUIS. Travels in Indo-China and the Chinese Empire. London, 1872. (See review in the *Athenæum* of Dec. 21.)—HAZARD, SAMUEL. Santo Domingo, Past and Present; with a Glance at Hayti. London, 1872. (This book makes a timely appearance, considering the revival of the annexation project in this country, which the author favors.

He gives a useful map of the island, for which also Redpath's "Guide to Hayti" should be consulted. See review in the *Athenæum* of Dec. 28.)—JOHNSTONE, T. B., and ROBERTSON, Col. J. A. Historical Geography of the Clans of Scotland. With several maps, and plans of the battles of the Pretender. Philadelphia and New York: George Gebbie. 1872.—MEDHURST, W. H. The Foreigner in Far Cathay; with a map. London, 1872. (A valuable work on China.)—Overland, Inland, and Upland. London, 1872. (A Journey to India. See notice in *Athenæum* of Dec. 21.)

Periodical Literature.—*Ocean Highways* for December has an article on the Congo, by Lieut. Grandy, the leader of the "Livingstone Congo Expedition." He traces the history of discovery from 400 A.D., and says that no serious attempt has been made to explore the river since Capt. Tuckey's expedition of 1816. The last number for 1872 of the *Tour du Monde* has a review of the past six months by M. Vivien de St.-Martin, devoted entirely to the African explorations of Stanley and Schweinfurth, whose routes are traced on one full-page map, which is helpful in appreciating the Nile-Congo problem. The Lualaba is represented as cut off from the White Nile by the Welle, but no range of mountains interposes between it and the Albert Nyanza. No. 40 of the Berlin Geographical Society's Journal has a map of ancient Alexandria.

Cartography.—Col. Robertson Ross, Adjutant-General of the Dominion, has prepared a carefully corrected map of the immense territories lying west of Lake Superior, to accompany and illustrate his forthcoming report of his recent tour of inspection across the Continent.

—Following the example of Mr. Bennett of the *Herald*, the proprietors of the *Daily Telegraph* have placed an unlimited sum at the disposal of the Society of Biblical Archæology, to enable Mr. Smith, the author of the paper on the Chaldee account of the Deluge, to proceed to the East for the purpose of further investigation among the Assyrian ruins.

—Dr. Beke contemplates a journey to the East with a view to Biblical explorations. He proposes to look for "The Mount of God" in the country east of the Gulf of Akaba.

—The Berlin Geographical Society has opened subscriptions for the contemplated Congo Expedition. Dr. Güssfeld, the glacier explorer, who is to be the leader of the enterprise, has himself contributed nearly £1,000, and there is every prospect that the full amount necessary will be forthcoming.

—We learn from the *Times of India* that while Mr. T. T. Cooper is about to make another attempt to penetrate into China from Mo-

mein, the well-known French traveler, M. Garnier, who was the leader of the French expedition through Yunan into China, is about to start on another expedition from China through Thibet to India. M. Garnier has already left Hongkong for Shanghai to commence preparations for his journey.—*Nature*, Jan. 2.

Photography.—Our excursion this month will be wholly in America, but, thanks to the resources of the Messrs. Anthony, we shall skip at pleasure from the temperate zone to the tropics, and from sea to land.

(a) Here are eight of their magnificent Niagara views—broader as mounted than the Yo Semite views described last month, and with the sky filling half or even more of the picture. For, being instantaneous, they have been made to fix not only the spray and mist of the falls, but the fleeting cloud forms that float above them. For these combined effects nothing could well exceed two representing the American Falls, as seen from slightly different points, and one showing the Horse Shoe Falls and Terrapin Tower. More striking, perhaps, are the moonlight effects of cloud and sheen on the river above the falls. Of these we have selected three of singular beauty, among which it is hard to choose. A General View of the Falls, from the American side (Point View), unites almost all their salient and picturesque features, not excepting the groups of newly married folks who haunt the place with the return of every season. Lastly, a view of the New Suspension Bridge, taken from one of the cable towers, and looking straight down the middle of the track, gives a vivid idea of this stupendous and yet common-place achievement of engineering.

(b) The cluster of islands, known as the Bermudas, lies nearly due east of Savannah, about 900 miles distant. Mr. Balch has taken some "art views" of them which will be found interesting in many ways. No. 2 shows Front Street, in the capital city Hamilton (Bermuda or Long Island). The houses on the left testify in their construction to a sub-tropical climate, consisting of an open verandah below, and a latticed one above, reached by steps from the outside. Between the street and levee, at which several brigs and schooners are lying, is an ill-kept and rudely enclosed row of stunted trees. No. 3 overlooks the Admiral's Garden, and gives a fine prospect seaward or bayward. The foreground is very uneven and the soil seemingly poor, with no luxuriant growth of trees. No. 27, from the Lighthouse, is of wonderful extent, embracing so much of the archipelago that one readily concedes to it the traditional 365 islands. No. 79 is a most curious instantaneous view of the Devil's Hole—a natural aquarium in which numerous fish are seen in the act of swimming about in the clear water. No. 8 gives a banana and a papaw tree, the latter being the taller, with bare stem till the top is nearly reached; the banana has a pennate, palm-like foliage.

(c) For tropical vegetation, however, we may examine with more

satisfaction the fine series of views taken by the Selfridge Darien expedition in 1871. We find two noble specimens of the Cocoanut on the banks of the Tuyra River (flowing into the Bay of Panama), which we may compare with our old friends in the Bishop's Garden at Havana. A steam launch lies moored over opposite. The Bread-fruit tree has leaves which resemble those of the oak in a rough way. An Indian woman stands near by. The Mango tree near Pinogana recalls the Southern live-oak in its huge mass, of perfect symmetry, beneath which some one of the explorers is making himself comfortable in his hammock—perhaps the same shown in another view as taking his siesta under one of the thatched roofs of Chipigana, the village being seen below him. In a Forest Trail, and the Limon River at the Beach, we have glimpses of tropical tangle to us nameless. The India-rubber tree has the easy grace of our Northern birch. This specimen has been well hacked in its lower trunk, perhaps by the negro India-rubber Hunter shown in another view. He is on his way down the bank to his canoe, carrying in his right hand his hatchet, and supporting with the left on his shoulder his gun, a long and heavy knife, and a basket slung behind, whose contents are not discernible. From a satchel in front protrudes the handle of another tool. Our May Notes have told how they make rubber in Bolivia. Darien Harbor forms the subject of another view, and primitive peoples and manners are depicted in Chipigana from the Hills; a Group of Natives of the same place, standing in their canoe-yard, where building has evidently been going on; a Street Scene in Pinogana; and Santa Maria del Real, seen from the river, with the Cordilleras in the distance. The thatched houses have a very pleasing appearance, the least civilized being the Native Hut at Turbo (on the Gulf of Darien). Cartagena, founded in 1529, though Ojeda landed there twenty years before, is illustrated by numerous views. We can recommend the following as being characteristic, for streets, buildings, and inhabitants: the Main Gate; a Gate surmounted by a niche; the church called *de la Merci*; and a street or plaza in which the people are grouped about a donkey-cart.

THE *Scientific American* has recently given a statement relative to the extreme summer temperature of different parts of the world. Thibet is stated to be the hottest country in the summer, the temperature in the shade rising to 150°. In Senegal and in Guadaloupe the summer temperature is said often to reach 130°. Throughout the delta of the Ganges the mercury rises to 120°. Central America appears to have about the same summer temperature. In Cape Colony—the African diamond diggings—and in some parts of Utah, the mid-summer heat is 105°. These are the highest temperatures given, the European mean summer temperatures varying from 70° to 90°, Iceland according to its mid-summer heat at 45°, and Nova Zembla at 34°.

MORALS AND MANNERS.

A MAN of good morals is not necessarily a man of good manners, nor is a man of good manners necessarily a man of good morals. A person may have a polished address, and be exceedingly punctilious in all the conventionalities of society, and yet have a heart full of "evil thoughts, adulteries, murders, thefts, covetousness, deceit, lasciviousness, blasphemy, foolishness," all of which "defile a man," although he may never "eat bread with unwashed hands."

A case in point is that of a middle-aged minister of pleasing appearance and refined manners and of gifted tongue, who came some years since, with flattering recommendations, to a town in — to aid in revival works. Making the acquaintance of a woman near his own age, refined and agreeable, of good family and possessed of a competence, but who had not made human nature a special study, he in a short time made her a proposal of marriage and was accepted. The ceremony was performed without delay, and on the next Sabbath the bride and groom made their appearance at church. At the conclusion of the sermon, he was invited by the minister in charge to make some remarks, which he proceeded to do, something on this wise:—"Riding once in the State of New York in early winter, I came to an apple-tree, upon which hung a single apple. I alighted from my horse, plucked the apple, and found it fair to look upon, without speck or blemish. Being eager to test its goodness, I hastily cut it open with my knife, and behold, it was rotten to the core. During the remainder of my ride I thought how much this apple resembled many professors of religion. Unblemished before the world, fasting and praying, giving tithes of all they possess, they yet have hearts full of all manner of iniquity." The next day our minister disappeared, taking with him a horse for which he had given his note endorsed by his wife's brother, and some money which he had borrowed of another member of her family. He has never been heard from since, except by way of two or three wives, whom he had married

under similar circumstances in other places. Shakspeare describes such a person as

“A goodly apple rotten at the heart.”

On the contrary, one may hourly be a transgressor of the laws of good breeding, as laid down by polite society, and yet bring forth such fruits of the Spirit as “peace, long-suffering, gentleness, goodness, meekness and temperance.”

The practice of good manners, as expounded by Lord Chesterfield, and as acted upon by people in general, has been said to be the art of deception. If this be so, it is a hypocrisy that in many cases is pardonable, for good breeding requires the suppression of many disagreeable acts, many words of reproof, and many harsh criticisms. Some persons lay up their good manners, as they do their good clothes, to be used only when absent from home: being crabbed, unreasonable, and morose in the family circle, but exceedingly amiable and courteous everywhere else. “Oh what a goodly outside falsehood hath” in people who thus act! “Manners,” says Pope, “with fortunes turn.” Shakspeare has it,

“Man, proud man,
Drest in a little brief authority,
Plays such fantastic tricks before high Heaven,
As make the angels weep.”

The old saw, “Put a beggar on horseback, and he will ride to the devil,” more coarsely, but not less pointedly, expresses the same sentiment. Prosperity finds many a person arrogant and presuming, whom adversity saw well-mannered and unassuming.

Manners seem also to turn with times and seasons, with circumstances and localities. In the Southern States, the raising of the hat on meeting another person is considered a mark of servitude; with us, it is a mark of respect. Reproving a Southern pupil once for handing me a knife blade first, I was astonished to hear a well-bred lady remark, that she had never before been made aware that that was a violation of good breeding. Lord Chesterfield was very indignant at receiving a letter sealed with a wafer, and exclaimed, “What does the fellow mean by sending me

his spittle?" What would he say, if in this age he should see a whole nation violating this requirement of good breeding, in sending self-sealing envelopes moistened with the sender's saliva?

It would seem from all this, that it is exceedingly difficult to find any uniform standard of good manners. Society has one of its own, no doubt, but it may well be feared that hypocrisy lies at its base. In so far as this standard is founded upon the Scripture rule, "Do unto others as ye would that they should do to you," it is right; but beyond this it lies upon an unsound foundation, and will eventually fall with its own weight.

Society has established some nice distinctions in its code of morals. To one class of offenders it says, "Stand aside, we are holier than you;" while to another class, guilty of the same offense, it extends the hand of fellowship, and calls its crimes the follies of youth or the vagaries of middle age. It sends its police officers to arrest girls that may be aimlessly wandering about the streets of an evening, but allows boys to stand idly at the corners of the same streets, to frequent the billiard room, the gambling house and the dram shop, or to make night hideous with their revellings, on the plea that "boys must sow their wild oats."

The complaint has been recently made, that woman would prescribe the same social restraints, and the same moral regimen, for her son as for her daughter. If wrong be wrong, why should she not? Boys should not be taught that moral obligations rest more lightly upon them than upon their sisters, should not be taught that they may be brutes before they become men; and here comes in the work of the faithful teacher. Society, as now constituted, needs new light both in morals and in manners, and the coming generation must reflect that light. The great need of the age is not so much instruction upon these points, as the infusing of a spirit of moral courage into the hearts of the young. Of physical courage we have striking examples every day, but moral courage is a commodity rarely to be found in any market. The power to say No, or to acknowledge a fault, seems to have departed from the race with the fall of our first parents; for "The woman that

thou gavest me," was the plea of Adam, and "She is my sister," that of Abraham and Isaac, when their moral courage was put to the test. The punishment of the body for the crimes of the soul has been enlarged upon by the clergy, and practised by the laity, to such an extent that it requires almost as much courage to tell the truth when one is in fault, as it would be to walk into the blazing cannon's mouth.

In my school, the boy whose earnest asseverations I can least trust, is the one that is always ready, when others do wrong, to say, "They will go to the bad place and be burned up." Children should be taught to do right, not because it is the best policy, not because it will save them from punishment, but because it will make them lovable, will make them god-like. Honest men, all over our country, are beginning to be alarmed because rogues hold the balance of power; but it is so, only for the reason that many, very many, honest men are cowards, and their cowardice is known to the rogues who act upon it. Martyrs have fallen for our country upon that country's battle-fields, and martyrs will fall in the moral battle that sooner or later must be fought by our countrymen.

The children of our schools are in training for this great battle, and its issue depends entirely upon the amount of moral courage carried into it.

N. C. W.

RUSKIN, writing of himself, says: "I was obliged to write too young, when I knew only half-truths; and was eager to set them forth by what I thought fine words. People used to call me a good writer then; now they say I can't write at all; because, for instance, if I think anybody's house is on fire, I only say, 'Sir, your house is on fire;' whereas formerly I used to say, 'Sir, the abode in which you probably passed the delightful days of youth is in a state of inflammation,' and everybody used to like the effect of the two p's in 'probably passed,' and of the two d's in 'delightful days.'"

NURSERY RHYMES FOR LITTLE SCIENTISTS.

For the Little Botanist.

Little Bo-Peepals
Has lost her sepals,
And where do you think she'll find 'em ?
In the involucre,
By hook or crook, or
She'll make up her mind not to mind 'em.

For the Chemical Child.

Sing a song of acids,
Base and alkali,
Four-and-twenty-gasses
Baked into a pie ;
When the pie was opened,
Wonderful to say,
Oxygen and Nitrogen
Both flew away !

For the Astronomic Infant.

By-Baby bunting,
Father's gone star-hunting,
Mother's at the telescope
To read the baby's horoscope.
By-Baby Buntoid,
Father's found an asteroid ;
Mother makes by calculation,
The angle of its inclination.

For the Young Geologist.

Trilobite, graptobite,
Nautilus pie,
Seas were calcareous,
Oceans were dry.
Eocene, miocene,
Pliocene, tuff,
Lias and trias,
And that is enough.

—Open Hand.

"THE SPHEROIDAL STATE OF WATER."

IN our last number there was described and illustrated one of Nature's most wonderful laws, that of crystallization as it relates to the freezing of water and the formation of snow crystals. A second form, or rather condition, of water, is that known as the spheroidal state; and the facts relating to it are equally strange and wonderful. That the reader may the more clearly understand the nature of this phenomenon, reference is made to Fig. 1, as the experiment

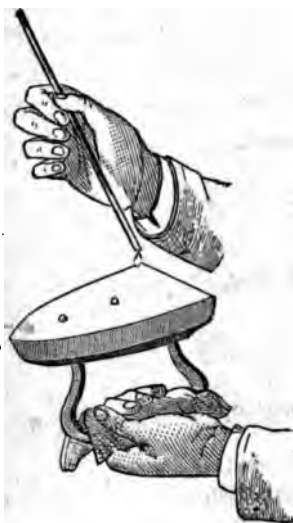


FIG. 1.

there illustrated may be readily repeated. The flat-iron, having been first heated, is held in the position shown; that is, inverted, with its point slightly lowered. Now, if upon this smooth, hot surface drops of water, or some other fluid, be permitted to fall from the end of a light rod, it will be noticed that instead of passing off in steam, as would be the natural result, these drops retain their spherical shape, and roll down and off the iron, just as though the metal were cold, and the drops those of quicksilver instead of water. The query at once suggested by the action of the water is a most natural one: Why is it

that a fluid, which often, under a less heat, is converted into steam, now remains in its fluid state? Before replying to this question, let us, if possible, vary the experiment slightly. To do this, it is needful to suppose that the otherwise smooth surface of the iron has its centre slightly hollowed, so that if the iron were held square, and a drop allowed to fall upon it, it would no longer roll off, but would remain within the depression. We heat the iron, and add the drop, as suggested; but now mark the result. At first the little round crystal globule rushes now up one side, then across to the other, or rests trembling in the centre; but though

in a hot pan, as it were, yet it does not boil; and, if we could place in its centre the bulb of a miniature thermometer, the mercury would show that the water of the drop was not hot enough to boil,—that is, that it stood below 212° Fahr. But while we are making this trial, or watching the odd movements of the drop, the surface of the iron is becoming gradually cooler.

Now suddenly, and with no warning except a spiteful little hiss, all is changed: above there floats a little cloud of steam, and below is the smooth metal surface; not a sign of moisture, and the drop gone. All this in an instant; and yet, before that, there were perhaps minutes that it remained unchanged. Before replying to the main question, we will experiment a little further, in the manner shown in Fig. 2. Here we have a flat polished metal plate, heated by a

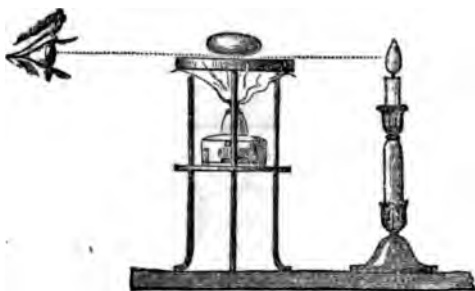


FIG. 2.

lamp beneath. When the plate is almost red hot, we drop carefully upon it the liquid from the rod. As in the first instance, the drop remains upon the surface; and, as the lamp keeps the plate hot, there is no danger of our restless little globule going off in steam. Let us now place on a line with the surface, as shown in the figure, a candle, and then, bringing the eye into the position shown, look across the surface on which the drop rests, or is *supposed* to rest,—for here is the whole secret, since, if the water actually touched the hot surface, it would boil and disappear. But the experiment with the candle shows that between the drop and the plate there is a thin space; and further investigation proves that this space is occupied by a thin layer or cushion of steam, which was formed the instant the drop

touched the hot surface, and upon this cushion it was held up, and thus, as it were, kept cool. The instant, however, that the metal cools to a given point, the charm is broken: the drop falls down into the hot surface, and is at once changed into steam. We have chosen to direct the attention of the reader to this wonderful law of fluids—first, because it is a wonderful law, and therefore should interest all who seek to know more of Nature and her works; and, second, because in this simple result we have illustrated one of the causes of steam-boiler explosions. From one who has made this question the subject of careful study and observation* we learn, that, in order for the spheroidal state to be assumed, it is necessary that the solid body be heated above a certain limit of temperature, which is special for each liquid, and which is lower in the degree that the liquid is more volatile. Thus, the limit for water is 288° Fahr.; for ether, 142° Fahr.; etc.; that is, the metal plate or flat-

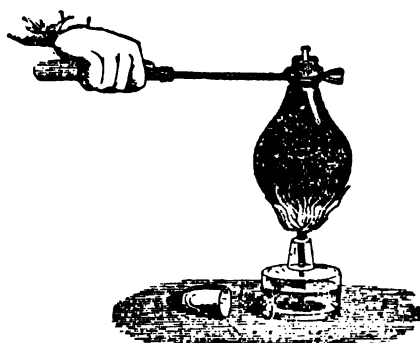


FIG. 3.

iron must be hotter than this before the drop will remain on it, and the moment that this point is reached the fluid volatilizes.

Consider now the boiler of a steam-engine. When in a normal condition, its sides, which are in contact with water, are alone heated by the fire. The water being thus kept at a constant temperature of the ebullition prevents the metallic sides of the boiler from becoming hotter. Now, if from any unexpected cause, such as the incrustation which sepa

* Achille Casin, author of "The Phenomena and Laws of Heat."

rates the water from the sides, they become heated to a much higher temperature, and by the flaking-off of the crust the hot surface is exposed, the water which comes in contact with it will at once assume the spheroidal shape. But the sides of the boiler are now gradually cooling, till the fatal point is reached, when the water, suddenly released from its peculiar condition, is converted into steam, and that so suddenly as to cause a pressure too strong to be withstood. In Fig. 3, this point is illustrated in a simple manner. A copper flask is heated, and then water introduced. As long as the high heat is kept up, the fluid remains in a flattened globule at the bottom of the vessel; but if the bottle be removed from above the flame, and thus be allowed to cool, the temperature will fall to 288° Fahr., and then all the water boils at once, and, as a result, the cork is driven violently from the top of the flask, or, if too closely fitted, the vessel itself is burst. While on this subject, it may be interesting to notice certain other experiments which serve to illustrate the same principle, and add another explanation to the often perplexing question, why a boiler should explode when the guages showed only a low pressure of steam, and plenty of water.

Mr. W. F. Barrett, in an interesting paper read before the British Association, describes the following experiment, made while investigating the conditions affecting the spheroidal state of liquids, and their possible relationship to steam-boiler explosions. Desiring to cool quickly a white-hot ball of copper, he plunged it quickly into a basin that stood near, containing soap and water. To his surprise, the ball entered the cold liquid without burning or the evolution of any steam or vapor, and, on being quickly removed, was found to be apparently as hot as before. Attracted by this peculiar and unexpected result, he repeated the experiment, only in this instance using a basin of fresh, pure water; when the usual hissing followed the immersion of hot metal, followed by a lively generation of steam, and a rapid cooling of the metal. From repeated experiments in which solutions of soap, glycerine, albumen, and other organic substances, were used, the writer discovered that in each of these liquids the heated copper ball entered smooth-

ly and quietly, glowing at a white heat even at a depth of a foot or more beneath the surface, the metal sphere being apparently surrounded by a vapor bubble, giving to it the color of burnished silver. As the ball gradually cools, this gaseous envelope slowly contracts, and finally collapses suddenly, followed by a loud report and the evolution of large volumes of steam. Reasoning from these results, the writer suggests an explanation of certain otherwise problematical boiler explosions. Traces of oil, or other organic matters, having found their way into the boiler, and under conditions similar to those explained above, may produce a sudden generation of steam of sufficient strength to burst it.
—*Industrial Monthly.*

A CAT'S DREAM.—Animals, especially the dog, cat, and parrot, often indulge in the luxury of dreams. A correspondent of *Land and Water* tells the following anecdote of a cat: "She was very still, and appeared to be fast asleep, when suddenly she sprang into the middle of the room, where she fixed her feet on a limited spot on the floor, to which also her nose was applied, as if closely grasping something she held in her claws. This continued for a short time, when the nose was gently raised, and the visible attention was directed to the feet, which still continued their grasp; but after a time one of them was gradually removed, and then the other, at which puss appeared greatly at a loss to imagine whither the imaginary object could have gone, so as to escape her grasp. She looked in various directions along the floor, with a foolish face of confusion: and then again her attention was directed to the spot on which the feet were first closely pressed, as if to examine closely whether the presumed escape had been by sinking through the floor; and she returned more than once to re-examine the place, as if she found it impossible to comprehend how an object she had so plainly seen and grasped should have sunk into nothing. Many minutes elapsed before the cat appeared to be reconciled to the conviction that what had been a dream was not in truth a reality."

TRAVEL FOR TEACHERS.

IT is a good thing to read about historical places, but it is much better to visit them; it gives a sense of reality which one does not otherwise get. To travel in a country awakens interest in its past history not only, but it leads to a deeper concern in its present and future development. For we are all, perhaps unconsciously, disciples of the object-teaching system. To the child we describe the qualities of an apple, and then show it to him; the man reads French history and then goes to see France. Without this actual seeing of the object spoken of, there is some vagueness of ideas concerning it. On the cover of our school-atlas was a picture of the Leaning Tower at Pisa, but it seemed no more real to us than did the Palace of Aladdin. To be sure, "the book" said there was such a tower in existence, but did not that other much more charming book, the Arabian Nights, give as circumstantial an account of Aladdin's Palace? Of course, geographers cannot find it now, the history expressly recounts the manner of its disappearance, and to a child one thing in print is as true as another. So, the marvellous palace and scarcely less wonderful tower, were placed by us in the same category. But all this was changed one day by a gentleman who had been at Pisa, and told us about the tower. Then it became a real thing. We had not seen it, but we had seen some one who had, and we gazed with wonder on the man who had actually touched the walls which were pictured on our brown geography cover. A teacher who can say to a child—"I have seen this country," invests it with a reality and an interest not to be attained in any other way. To no class is travel more beneficial than to teachers; and, as a rule, they are prepared to profit by it. It needs an amount of preparation in history, geography, and literature, which other classes have not the time to acquire in this busy country of ours. For it is not only the things seen which instruct, the things suggested have an educating power. Standing on the Place de la Concorde, in Paris, the ordinary tourist sees

only a beautiful avenue and majestic buildings, and in the centre of the square an obelisk of stone. But the student recalls the scenes enacted in 1793, when Louis XVI was beheaded here, and when Marie Antoinette, whatever may have been her faults, died like a queen on this spot. The obelisk of Luxor, originally standing before the great temple of ancient Thebes, leads his thoughts to the kingdom which flourished ages ago. And so things of comparatively little interest to the ordinary traveler are full of suggestiveness to one prepared to travel. A foreign tour does much too towards removing prejudice. The best read people entertain erroneous ideas of foreigners. Contact with them shows us that human nature is much the same the world over. Different conditions of life result in different habits, and from these arise the peculiarities which do so much toward keeping nations asunder. Take for example our own country and England. Just after the conclusion of the Revolutionary war there was naturally much enmity between the two countries, but long after all ground of complaint had been removed the old hostile feeling existed, and it is only of late years that we have come to regard the English with any degree of complacency. Travel in England has corrected our ideas, and we have found the English very good people after all—strongly prejudiced, certainly, but no more so than we.

A person of accurate ideas, in regard to foreign lands and nations, is no where more valuable than in the school-room, for it is of great importance that the young should have a just appreciation of foreigners with whom they will have business relations.

We are led to make these remarks because of the extended attention which this subject is receiving just now in connection with the projected Educational Tour which we noticed last month. We hope that many teachers will avail themselves of this opportunity to spend the summer vacation in Europe.

EDUCATIONAL INTELLIGENCE.

STATE SCHOOL OFFICERS.

| STATE. | TITLE. | NAME. | POST OFFICE. |
|-------------------|---------------------------|---------------------|-----------------|
| Alabama..... | Supt. Public Instruction. | Joseph H. Speed... | Montgomery. |
| Arkansas..... | " " Schools.... | Thomas Smith..... | Little Rock. |
| California..... | " " Instruction. | H. N. Bolander..... | San Francisco. |
| Connecticut..... | Sec. Board Education.... | B. G. Northrop..... | New Haven. |
| Delaware..... | | | |
| Florida..... | Supt. Public Instruction | J. C. Gibbs..... | Tallahassee. |
| Georgia..... | School Commissioner... | J. R. Lewis..... | Atlanta. |
| Illinois..... | Supt. Public Instruction. | Newton Bateman... | Springfield. |
| Indiana..... | " " " | Milton B. Hopkins. | Indianapolis. |
| Iowa..... | " " " | A. S. Kissell..... | Des Moines. |
| Kansas..... | " " " | H. D. McCarty.... | Leavenworth. |
| Kentucky..... | " " " | H. A. M. Henderson | Frankfort. |
| Louisiana..... | " " " | W. G. Brown..... | New Orleans. |
| Maine..... | Supt. Common Schools.. | Warren Johnson.... | Topsham. |
| Maryland..... | Prin. State Normal Sch.. | M. A. Newell..... | Baltimore. |
| Massachusetts... | Sec. Board Education.... | Joseph White..... | Boston. |
| Michigan..... | Supt. Public Instruction. | Oramel Hosford.... | Lansing. |
| Minnesota..... | " " " | H. B. Wilson..... | St. Paul. |
| Mississippi..... | " " Education.. | Henry R. Pease.... | Jackson. |
| Missouri..... | " " Schools.... | John Monteith.... | Jefferson City. |
| Nebraska..... | " " Instruction. | J. M. McKenzie.... | Lincoln. |
| Nevada..... | " " " | A. N. Fisher..... | Carson City. |
| New Hampshire... | " " " | J. W. Simonds.... | Concord. |
| New Jersey..... | " " " | E. A. Appar..... | Trenton. |
| New York..... | " " " | Abram B. Weaver... | Albany. |
| North Carolina... | " " " | Kemp P. Battle.... | Raleigh. |
| Ohio..... | Com'r Common Schools.. | Thos. W. Harvey... | Columbus. |
| Oregon..... | Supt. Public Instruction. | L. F. Grover..... | Salem. |
| Pennsylvania... | " Common Schools.. | J. P. Wickersham... | Harrisburg. |
| Rhode Island... | Com'r Public Schools.... | T. W. Bicknell.... | Providence. |
| South Carolina... | Supt. Public Instruction. | J. K. Jillion..... | Camden. |
| Tennessee..... | " " " | Wm. Morrow..... | Nashville. |
| Texas..... | " " " | J. C. De Gress.... | Austin. |
| Vermont..... | Sec. Board Education.... | John H. French.... | Burlington. |
| Virginia..... | Supt. Public Instruction. | Rev. W. H. Ruffner. | Richmond. |
| West Virginia... | " Free Schools..... | Chas. S. Lewis.... | Charleston. |
| Wisconsin..... | " Public Instruction.. | Samuel Fallows.... | Madison. |

TERRITORIAL SCHOOL OFFICERS.

| | | | |
|---------------|---------------------------|---------------------|-----------------|
| Colorado..... | Supt. Public Instruction. | W. C. Lothrop.... | Denver. |
| Dakota..... | " " " | Jas. S. Foster..... | Yankton. |
| Idaho..... | " " " | Daniel Crane..... | Boise City. |
| Indian..... | " Inst'n. Cherokee Na. | Spencer S. Stephens | Tablequah. |
| Utah..... | " Public Instruction.. | Robt. L. Campbell.. | Salt Lake City. |
| Wyoming..... | " " " | Dr. J. W. Hayford.. | Laramie. |

THE Minister of Public Instruction for the Province of Quebec, in his report for the year 1870 and part of 1871, gives synopses of the reports of the different district inspectors. The account of progress is not very favorable. The general complaint is that the teachers' salaries are too small. We learn with surprise the insignificant amount some receive. In one district it ranges from \$72 to \$80 per annum. Inspector Crepault says: "It is not uncommon to see young ladies, clever in every sense, receive \$60 per annum for their wearisome labor as teachers. The salary paid the bulk of our female teachers, for the most part trained in Normal schools, is under, rather than over, \$200 per annum. As to male teachers, their respective yearly salaries do not exceed \$300 per annum, and often do not reach \$200." It is not strange, therefore, that the class of teachers is not so good as could be desired. We cannot expect improvement in this respect as long as we value intellectual ability below the price of manual labor.

"The project of establishing schools wherein shall be taught the application of science to art, in connection with the Catholic institutions of Montreal and Quebec, has been carried out in the latter city, by the opening of a special course of science, as applied to art and industry, under the direction and management of the Laval University. This course of lectures, inaugurated under such auspices, offers every guarantee both for its efficiency and success."

From 1857 to 1870, the schools have augmented in number 1,131, or 56 per cent., being an average increase of 87 each year.

THE Annual Report of the Board of Education of Rochester, N. Y., gives a favorable view of the public schools of that city. The whole number of pupils registered during the past year was 8,751, and the average daily attendance was 5,147.9. The amount of money expended was \$114,000. The School Board appear to be worthy of their position. Not content with simply carrying on the necessary routine work, they sent Committees to various cities to study the workings of other schools, and get hints for the improve-

ment of their own. In compliance with the recommendation of one such Committee, German has been added to the list of studies in one school. If the experiment succeeds it will be introduced more generally.

THERE seems to be some misapprehension in regard to the four Protestant schools in Rome, recently closed by order of the police. The action was not prompted by hostility to the scheme, but because some formalities had been omitted, through ignorance on the part of Mr. Van Meter, the Superintendent. As soon as these difficulties are removed the schools will be reopened. They were quite well attended, one having over one hundred pupils. Food is furnished to the poorer children, and that of course attracts many. The closing of these schools was made the subject of debate in the Chamber, in the course of which, Signor Mussi stated—that in Rome upwards of 9,600 children were without instruction, and that a considerable number had gone to the American schools.

SUPT. PICKARD, of Chicago, reports that the schools of that city are "in better condition than they were before the fire." Although the fire destroyed fourteen buildings, containing room for about 10,000 pupils, in charge of 135 teachers, together with the office and all the records of the Board of Education, yet the school funds, fortunately, were safely deposited, and the schools were speedily in operation again. The amount of money donated for the relief of teachers and pupils, mostly from teachers and pupils in other places, was \$22,678.18. The school population is 88,219; number of pupils enrolled, 38,035; average attendance, 22,996.4; number of teachers, 476 (only 31 males); number of school buildings, 45; of sittings, 28,581.

"A GOOD sign for Ireland" is the fact that the public Commissioners for Education reported, at the close of the year ending Dec. 1, 1871, that there were 6,914 schools, with 1,021,700 registered scholars, and an average daily attendance of 363,850. This was an advance over the previous year of 22,701 on the rolls, and of 4,651 in average daily attendance.

THE London School Board show that they placed at school during the last quarter 13,048 children by the use of the compulsory power. The Board have adopted the following rule with regard to religious instruction: "The Bible shall be read, and there shall be given such explanations and such instruction therefrom in the principles of religion and morality as are suited to the capacities of children."

It is remarkable how rapidly the Japanese students acquire knowledge. The following instance will illustrate: In November, 1869, a young Japanese medical student entered the Berlin University, not even knowing the characters of the German language. He gave five months to the study of German, and in the remaining six months gained the knowledge of all the subjects, including Latin, which were required for the first examination. At the last examination in anatomy, he was one of the two candidates, who alone of the thirteen who presented themselves, obtained the notice "good."

THE Commissioners of Public Instruction of New York met Jan. 22d. The Annual Report of the City Superintendent was presented, showing the average attendance to have been 106,326, while the whole number taught was 235,880. The attendance in the First, Fourth, Sixth, Twelfth, Sixteenth, and Eighteenth Wards had decreased, but in all other Wards it had been larger than in 1871, especially in the Seventeenth Ward, where a new school had been opened. The absentees in 1872 were $13\frac{1}{4}$ per cent., against $18\frac{1}{4}$ in 1871. There is still room for 11,641 scholars in the public schools. Of the 2,552 classes, 587 were male and 536 female classes, 948 primary departments, 464 primary schools, and 17 colored classes.

On motion, it was resolved to memorialize the Legislature to enact a Pension Law for teachers of twenty-five years' standing.

The Finance Committee presented their financial statement for 1872, showing the receipts for the year as \$3,454,-818.73, and the expenditures, \$3,270,237.95, leaving a balance of \$184,580.78 in the hands of the City Chamberlain.

The President of the Normal College presented his report for 1872, showing the number of pupils on the register as 1,039, while the average attendance was 874. In the Model Primary School 310 scholars were registered, and the average attendance 261.

EFFORTS are being made to provide ampler facilities for instruction in India. There is great need of this, for, from a population of 190,000,000 only 622,342 children attend school. Private individuals have contributed large sums for the support of schools. Sir Jamsetjee Jejeeboy gave £200,000 stg., and Mr. Kustumjee Jamsetjee gave £10,000 stg. to educational instruction in Bombay and Guzerat. Female education is almost entirely neglected. In Calcutta there is some improvement in this respect. In 1861 there were only sixteen girls' schools, with a total of 395 pupils, but in 1870 the number of schools had increased to 284, and the number of pupils to 6,569.

THE correspondent of a Vienna paper, writing from Naples, says that there are to be important changes in the Chinese College of that place. It is to become an Asiatic College, where, besides history, geography, mathematics, French and English; Chinese, Arabic, Turkish, Persian and Hindostanee will be taught. The object of the institution will be to prepare young men for business pursuits and for diplomatic positions.

FROM the Annual Report of the Public Schools of Ontario, we learn that the total receipts for all school purposes, during 1871, amounted to \$2,124,471. The total number of pupils enrolled were 446,326. This is exclusive of the 8,441 attending private institutions. Non-attendants, 38,535. In the 4,598 schools reported, 5,306 teachers have been employed—increase, 141; of whom 2,641 are male teachers—decrease, 112; and 2,665 are female teachers—increase, 253. It will thus be seen that the number of female teachers is yearly increasing and that of males decreasing. The largest salary paid is \$1,000, and the smallest \$100. The report points out the folly of employing "cheap teachers."

The Report of the Boston Public Schools gives the following statistics: Whole number of pupils belonging to day

schools, 36,234; evening schools, 2,072; evening drawing schools 400; number of teachers, 1,001. Total expenditure for a. school purposes, \$1,314,380.33. The progress in drawing has been very satisfactory. Under the superintendence of Mr. Walter Smith, many teachers are fitting themselves to give instruction in this important branch of study.

CURRENT PUBLICATIONS.

IT has been some little time since an American Grammar of any pretensions has been given to the public. But now, a new candidate for favor and adoption ⁽¹⁾ has made its appearance. Prof. Swinton's book, however, is something more than a grammar. It is a condensed treatise on Analysis and Composition as well. The general mode of treating these subjects is good. It aims to be both progressive and practical. Hence the simpler and less abstruse facts are presented first; and, as successive facts are gradually unfolded, brief practical lessons are added, so that the learner may apply the principles he has been over, and be better enabled to remember them, and be profited by them. One decided advance on most Grammars in common use is the entire rejection of orthography and prosody from its pages. These subjects were similarly treated by Ben Jonson more than two hundred years ago, and they ought never to have been introduced into Grammars afterwards. They constitute no part of Grammar, properly so called.

But when we come to the details of this work, we find a number of things of which we can not speak so favorably.

We never could see what addition "the historical element" really was to a work the aim of which is, not to teach historical facts, even though they be of a linguistic nature, but "to furnish school-boys and school-girls with an available outfit of knowledge" for using English properly in

(1) A PROGRESSIVE GRAMMAR OF THE ENGLISH TONGUE; BASED ON THE RESULTS OF MODERN PHILOLOGY. By Prof. William Swinton, A.M., Author of "Word-Analysis," etc. New York: Harper & Brothers. 16mo., pp. 307.

speaking and writing. Under this view, of what advantage are observations like the following: "Incomplete verbs that require," etc., "are called Transitive (*trans*, over, and *ire*, to go)." How much wiser will school-boys and school-girls generally be for the closing parenthetical words? Again, on page 46 may be found the following questionable and useless statement: "The suffix *-ed*, which is the inflection of the past tense, is a contraction of the word *did*." A scholar might ask, as we once heard a young man ask, "Where did the suffix *-ed* or *-id* in the word *do-ed* or *d-id* come from?" The volume has altogether too much matter of this kind. We should reject the historical element, whether philological or etymological, altogether.

When we come to particulars, we do not see that the "Etymology" of this book is superior to that of several other grammars already before the public. In some respects, indeed, it is inferior. Many of its definitions are far from clear or correct. Opening at page 36, we read, "The *noun* used as object of a verb or of a preposition is usually called the *objective case*." If we are not mistaken, it is "usually," and more correctly, said to be "*in* the objective case." But this comes from the author's misconception of what the case of a noun is. On the same page we are told "A noun is said to be 'declined' when we name its three cases." Suppose a boy is asked to "decline" the noun *man*. He proceeds, "names its three cases" thus: "Nominative case, Possessive case, Objective case." Can he be blamed if he blunders thus? He has but followed the book. Talk about grammar being dull and stupid! How can it be otherwise when taught from books and by teachers that do not express themselves clearly, or rather have no clear idea of the thing they are trying to teach?—These are merely samples of the author's "definitions." But we pass on.

The classification of both nouns and verbs is objectionable and deficient. The condensed form in which the paradigms of verbs are given is fanciful and puzzling to children if not to older heads. Its object is brevity; but it is brevity at the expense of clearness. The treatment of the subjunctive mood is a failure. The only subjunctive that the author

finds is an elliptical potential or indicative. See pages 48-49. The true English subjunctive he ignores altogether. And yet he says very nonchalantly, p. 48, "The matter is really very simple." So thought Alexander when he cut the Gordian knot instead of untying it. But this solution of the little "puzzle" was not probably the most satisfactory.

The syntactical treatment of many points is more than questionable; it is plainly erroneous. On p. 9 we find this: "In such a sentence as 'three and two is five,' the *and* has not the function of a conjunction; it is here used as a preposition, and is equivalent to *with*." The same nonsense, together with more like it, is repeated on page 80. The author could not say, "The sentence is erroneous; *is* should be *are*." This would have spoiled his short but imperfect definition of a conjunction. Think of a grammarian justifying "Two and two *is* four!" We hope it will be a long day before the writers or teachers of primary arithmetic will write or teach the addition table after this manner. Mr. Swinton's exposition, p. 89, of the phrase "A house of my uncle's," is the old but wrong one. His rule, p. 90, in regard to "verbals in -ing" is contradicted by himself, and very properly, on p. vii of preface, in the sentence "He found it needful to separate the abstract maxims used in disposing *of* words," etc. The treatment, p. 103, of *his*, in the lines—

"And do you now strew flowers in *his* way
That comes in triumph over Pompey's blood?"

as "an adjective," and consequently unsuitable to be used as an antecedent for a relative pronoun, though not original, is unfounded and puerile. The objection would hold good against any noun in the possessive. The true criticism to be made here is "Use *who* rather than *that* in such instances." We have marked a number of other passages of a similar character, embodying crude or false instruction; but want of space forbids our noticing them.

The book, as a whole, is quite carefully written. Occasionally, as may be expected even in a grammarian, an error in composition occurs. A number of needless typographical errors also occur, one of them making Mr. Moon appa-

rently the author of a wretched blunder. These, of course, will be corrected in a second edition. There is a lack, we think, of exercises to illustrate and enforce the principles and rules given. Of review exercises there are none. An addition to this department would enhance the value of the book. The superfluous notes might very well yield to more of practical matter.

On the whole, we can hardly consider this a model English Grammar. We think we would much rather have one or more of the old ones. Perhaps a "model" Grammar never will be written. Still, we hope it may; and every additional effort to do it leads us to believe it will; if not in our day, in the "good time coming."

DR. JOHNSON'S CHARTS, containing diagrams of philosophical apparatus, and diagrams illustrating the principles of Natural Philosophy and Astronomy, have long been favorably known to all educators. They received the emphatic endorsement of such veteran and experienced teachers as Horace Mann, Dr. Wayland and President Frelinghuysen. They cheered the heart of many a teacher of Physics in his laudable efforts to make plain without the necessary apparatus the principles of science. In many a school and academy, too poor to procure an outfit of globes, and planetarium, and air pumps, and steam engines and electrical machines, these charts came as a perfect repository of figures and illustrations for the philosophical class-room. To the ingenious young mechanic striving to get a clear notion of Watt's great invention, Dr. Johnson came with his admirable diagram of the steam engine, with all its intricate combinations of pistons and cranks and valves and condensers, and in a trice the thing was clear as day. How many of the valuable and ingenious inventions and improvements which have made American skill conspicuous throughout the world, may be traced to the impulse given to youthful ingenuity by these charts! How much they are now doing to improve in all the schools the methods of teaching, and to clear up the thoughts both of teachers and scholars, in a class of subjects which more than all others require "object teaching!"

There was one feature about these charts which always

seemed especially to be commended. The diagrams were all drawn with bold, firm lines, which made it easy to imitate them on the blackboard with chalk. And no way compared in effectiveness for clearing up a lad's notions of a piece of apparatus with that of setting him with chalk and ruler and string to reproduce the same diagram on the black-board on a larger scale.

Dr. Johnson's book⁽²⁾ has grown out of these charts. It is a handsome volume of nearly 500 pages, in beautiful clear type, illustrated with an average of more than a diagram for each page. The diagrams are reduced by photography from the charts, and possess the same admirable features of clearness, boldness and simplicity. They are printed in white lines on a black ground, which adapts them particularly to reproduction on the black-board. We may say that we know of no wood-cuts of this description which are so well printed. It has usually been thought that wood-cuts on a black ground could not be well printed, and therefore could not be made available in many cases where otherwise they would be particularly appropriate. This book at least cannot be thus criticised.

The letter-press of the book consists mainly in brief, explicit explanations of the diagrams. It therefore forms primarily a hand-book for the charts. But in addition to this it will be found that the explanations are so complete and so systematically arranged, that they form in fact a treatise on Natural Philosophy. As such it might very well be used, and put into the hands of those beginning the study of Physics and Astronomy. From its very nature, the book is not a complete treatise on these subjects, because the use of mathematical formulæ and of elaborate discussions is avoided. It is in reality an attempt to convey to untrained minds, by the free use of diagrams, and by the use of common and untechnical phraseology, a clear although not complete knowledge of these important sciences. As such it must be pronounced a most successful effort. And its use in connection with the charts is most earnestly to be commended.

(2) JOHNSON'S NATURAL PHILOSOPHY AND KEY TO PHILOSOPHICAL CHARTS, illustrated 500 cuts; for the use of schools and families. By Frank G. Johnson, A.M., M.D. Pp. 494, 8vo.

THE tendencies toward the popularization of Science are every day more and more apparent; and in this place we may as well define what we mean by *popularizing science*; it is not the issue of books or essays on scientific subjects by those who are mere smatterers in science, and who if they attempt to present a popular view of any topic of scientific study, will be sure to fall into some egregious blunder, and lead their readers astray; of this mode of popularizing science we have had more than enough in many of the school text-books which have been and still are in vogue in certain quarters; but the true popularization of science is the work of a master; one who himself thoroughly imbued with knowledge on the subject of which he speaks, has yet that sympathy with the people that he can put himself in their place, and make his knowledge fully available for their instruction. To this class belong Professor Tyndall, whose works and whose charming lectures have done so much to popularize recent discoveries in the laws of light, in electricity, in spectroscopy, and in the domain of heat; Agassiz, whose lectures on fossils and geological topics are so delightfully instructive, Prof. Youmans, whose services in this direction are of great value; Prof. Barker, of New Haven, who has been over a part of the same topics as Tyndal, and Profs. E. S. Morse and B. G. Wilder, whose researches in the department of Animal and Human Life have been so interesting and valuable. To this class, though in a slightly different department of science, also belongs the eminent French physicist Elisée Reclus, whose two volumes,⁽³⁾ "THE EARTH" and "THE OCEAN, ATMOSPHERE AND LIFE," are by much the most complete popular treatises on physical geography yet published. It has been well remarked of these volumes, that if we did not know these descriptions of the life of the globe to be true, they would rank as the most charming of romances; but that knowing their author to be one of the most eminent and truthful of physical geographers, we are compelled to give them the

(3) "THE EARTH: A DESCRIPTIVE HISTORY OF THE PHENOMENA OF LIFE ON THE GLOBE." By Elisée Reclus; and "THE OCEAN, ATMOSPHERE AND LIFE;" being the Second Series of a Descriptive History of the Life of the Globe. By Elisée Reclus. Two vols. 8vo, with nearly 350 maps and plates. New York: Harper & Brothers.

first rank in that trio celebrated by Victor Cousin, as "The True, the Beautiful and the Good." Much of the matter of the second volume ("The Ocean, etc.,") is the result of the personal observations of M. Reclus, and all of it is fully verified by the testimony of competent and able observers. The Ocean, the Atmosphere, and its meteorology and perturbations, the Flora and Fauna of the world, the influence of climate and topography, of sea, river and lake, of mountain, valley and plain, and the course of history on the various races; and the influence which man himself has exerted on the earth by his works, all are discussed with great interest and power. The elegant colored maps and the profusion of fine illustrations which the publishers have provided, aid in making them most valuable additions to every school or popular library as well as to the working library of every successful teacher. They will aid greatly in enabling him to make physical geography an interesting and profitable study. The same publishers have made a valuable contribution to our knowledge of our great domain on the Pacific Slope, in the publication of Mr. Charles Nordhoff's "CALIFORNIA." (*). Mr. Nordhoff describes geographically, and backs up his glowing pictures by a formidable array of statistics. We sometimes half suspect that he occasionally looks through rose-tinted spectacles, as when he extols so highly Santa Barbara, San Bernardino and San Diego as offering an almost absolute cure for that terrible scourge, consumption; for we have too vividly in mind the sad fate of dear friends who went there, invalids, indeed, but not apparently far advanced in the disease, but after some months' residence, fell victims to the disease, and as it seemed to us, as soon as they would have done here. But the volume, as a whole, is replete with interest, and gives to the geographer, as well as to the traveler and prospective settler, a large amount of information in regard to the climate, topography, agriculture, productiveness, and mining and commercial interests of Southern California, not elsewhere to be found. The advent of Froude, Burke and others as lecturers on Irish and English History, and the

(*) "CALIFORNIA: FOR HEALTH, PLEASURE AND RESIDENCE. A BOOK FOR TRAVELERS AND SETTLERS." By Charles Nordhoff. New York: Harper & Brothers.

bitter and persistent Meline-Froude controversy in regard to Mary, Queen of Scots, have imparted a new interest to the study of English history, especially of the period of the Tudors; and it is fortunate for American readers that there should have appeared, just at this time, two narratives of Tudor Times,⁽⁵⁾ which, in the careful accuracy of their record of the events of those times, their fidelity to the manners, customs, and language of the period, and their skillful limning of the prominent actors, both princes and nobles, throw more light upon the era of the Tudor dynasty than any merely historical work could possibly do. Miss Holt has drawn her historical sketches, as well as her portraitures of family and court life from original sources in the state paper office, the British Museum, and the office of the Master of the Rolls, and her investigations have been as thorough and extensive as those of Froude, Macaulay, or Miss Strickland. The books have a religious purpose, but this has never been allowed to warp the facts or becloud the writer's judgment. No other attempt to depict the life of the English people in a period so remote, has been anything like so successful as these; and if the same writer will go on with the reign of Elizabeth in the same painstaking yet graphic style, she will confer a greater boon on the readers of English literature and history than has yet been bestowed by any writer, male or female, of our times.

MISCELLANEA.

HOW rare a thing it is to find *memoriter* quotations, professedly verbatim, given with entire exactness, few are aware, unless they have taken the pains to verify them. In Royse's *American Literature*, p. 357, we find this, in an extract from an address of E. P. Whipple's—a man, certainly, whom one could not expect to catch tripping:

Like snowfalls on a river,
One moment white, then gone forever.

(5) "ISOULT BARRY, OF WYNSCOTE: A TALE OF TUDOR TIMES." By Emily Sarah Holt; and "ROBIN TREMAYNE: A TALE OF THE MARION PERSECUTION." By Emily Sarah Holt. New York: Robert Carter & Brothers.

Burns wrote (see *Tam O'Shanter*) :

Like the snowfall in the river,
A moment white—then melts forever.

In Hart's *Am. Lit.*, p. 103, is a prose citation from Whittier, ending with this from *Paradise Lost*, III. 37 :

Feed on thoughts *which voluntarily make*
Harmonious numbers.

This is revision with a vengeance! Milton wrote :

Feed on thoughts that voluntary move.

The Quaker poet could not have made so harsh and un-rhythmical an alteration. It must be Hart's blunder. In this opinion we are confirmed by the fact that, on p. 163 of his *Rhetoric*, he presents the following line as good heroic verse :

Talent the sunshine on a cultivated soil.

However, in this case, as in some others, he can fall back upon Bain as his authority.

A RECENT calculation relative to the principal European languages shows that English is spoken by ninety millions of persons, inhabiting Great Britain and Ireland, North America, the Bermudas, Jamaica, Cape of Good Hope, Australia, Van Diemen's Land, Newfoundland, and the East Indies ; German by fifty-five millions, in their own country, Switzerland, Austria, Hungary, Russia, North and South America, La Plata, Australia and the East Indies ; Spanish by fifty-five millions in Spain, Cuba, Mexico, the republics of South America, Manilla, etc. ; and French by forty-five millions in France, Belgium, Switzerland, Canada, Cayenne and North America.

If a tallow candle be placed in a gun, and shot at the door, it will go through without sustaining any injury : and if a musket-ball be fired into water, it will not only rebound, but be flattened as if fired against a solid substance. A musket-ball may be fired through a pane of glass, making the hole the size of the ball, without cracking the glass ; if the glass be suspended by a thread, it will make no difference, and the thread will not even vibrate.

AMERICAN EDUCATIONAL MONTHLY.

APRIL, 1873.

*SCHOOL-HOUSES FOR THE COUNTRY.**

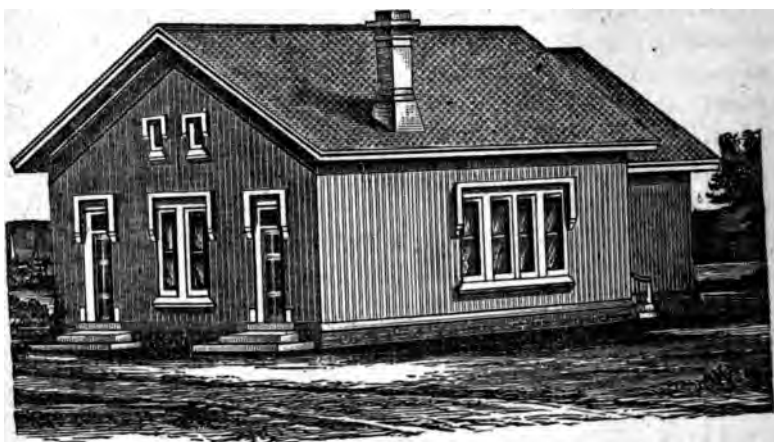
THE plan of this design represents a medium-sized school-house. It is rectangular in form, and the school-room has room for sixty pupils. By simple changes it may be made to accommodate more or less, according to the requirements. In the rear of the main building is a small structure, which may be used as a wood-room, recitation-room, or both. In it are the back entry-ways.



The windows are put into one group on each side. The door in the front partition of the school-room may be omitted, and the entrance to the front recitation-room made through the front halls. The stoves and ventilating flues are arranged as before explained. The recitation-room may be made wider by a slight increase in the length of the building.

We would call special attention to this design and the several elevations accompanying it. It perhaps combines more than any other the essential requisites of country

* From Jehonnot's new work on School-Houses.



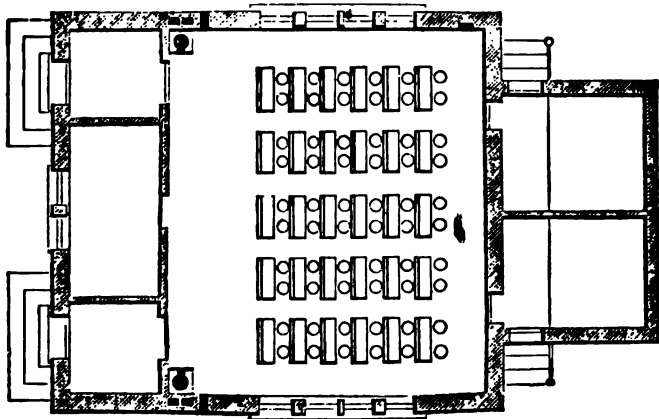
ELEVATION NO. 1.



ELEVATION NO. 2.

school-houses. It is cheap. No room is lost, and no expense is wasted upon superfluous features. It is simple in construction, so that any carpenter can build it who has wit enough to put building materials together. It is exceedingly neat in appearance, and this beauty will appear greatly enhanced when these elevations are compared to the houses now ordinarily found in country places.

It affords ample accommodation for the school and freedom of movement for both teacher and pupils. It admits light in the most effective manner possible, and if properly furnished with adjustable inside blinds, the light can be properly tempered and distributed. Ample arrangements are



GROUND PLAN.

made for a perfect system of ventilation, and an unlimited supply of fresh air in the disposition of the stoves, chimneys, and ventilating tubes. If intelligent care is bestowed upon them, pupils need never suffer from the effects of foul air. Provision has also been made for ample summer ventilation in the large openings on the four sides of the house.

Again, by having an extra recitation-room the plan is an adjustable one, admitting of the employment of an extra teacher during the season when the school is most crowded. If either of the elevations of this design is adopted, and the building erected as described, it will last for several generations, and will afford ample and excellent accommodation for all.

One of the rooms in the rear or the recitation-room in front may be used for the district library, or it may be fitted up as a cabinet for the reception and preservation of such specimens of natural history as are beginning to be considered indispensable to the highest success of our schools.

In making choice between the different elevations given, unless cheapness is considered the chief requisite, preference should be given to one of the more elaborate structures; and wherever a choice can be made in building materials, brick or stone should be used in preference to wood. A good stone house of this description, well furnished, would leave scarcely anything more to be desired in the form of school accommodation.

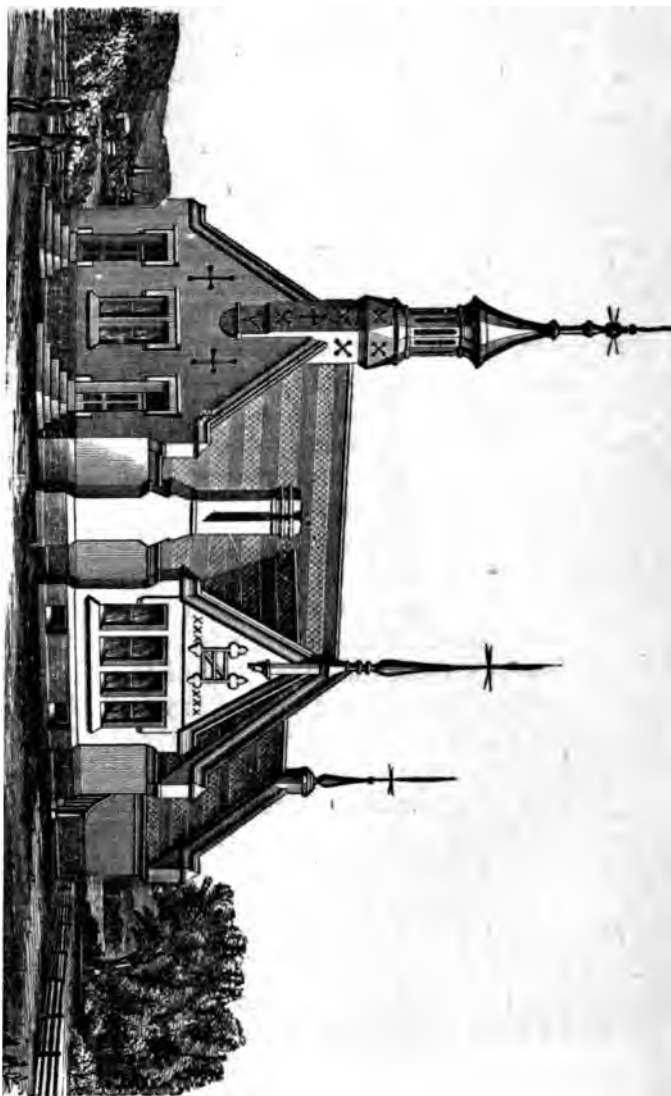
ELEVATION NO. 1.—This is the plainest possible elevation



ELEVATION NO. 3.

of the plan. It is a wood building, having a plain roof with the ordinary pitch, and wide projecting cornice. The finish may be battens or common siding; the former, however, is

referred on the score of appearance. The chimney and substantial, and in buildings of this kind, the y, being the only projection from the roof, should be



ith care. The windows, which are grouped together elevation, may be arranged in the usual manner, in case a side window would open into the porch, and d-light above the door might be omitted.

ELEVATION NO. 2.—This elevation, represented as finished in brick, may be built of wood. It is a modification of Elevation No. 1, with a change in the shape of the window-heads, the addition of a cupola, and the introduction of small mullion windows to light the porches. The finish is plain, and the general effect is good. The cupola may be omitted if desired, in which case the chimneys should be made broader.

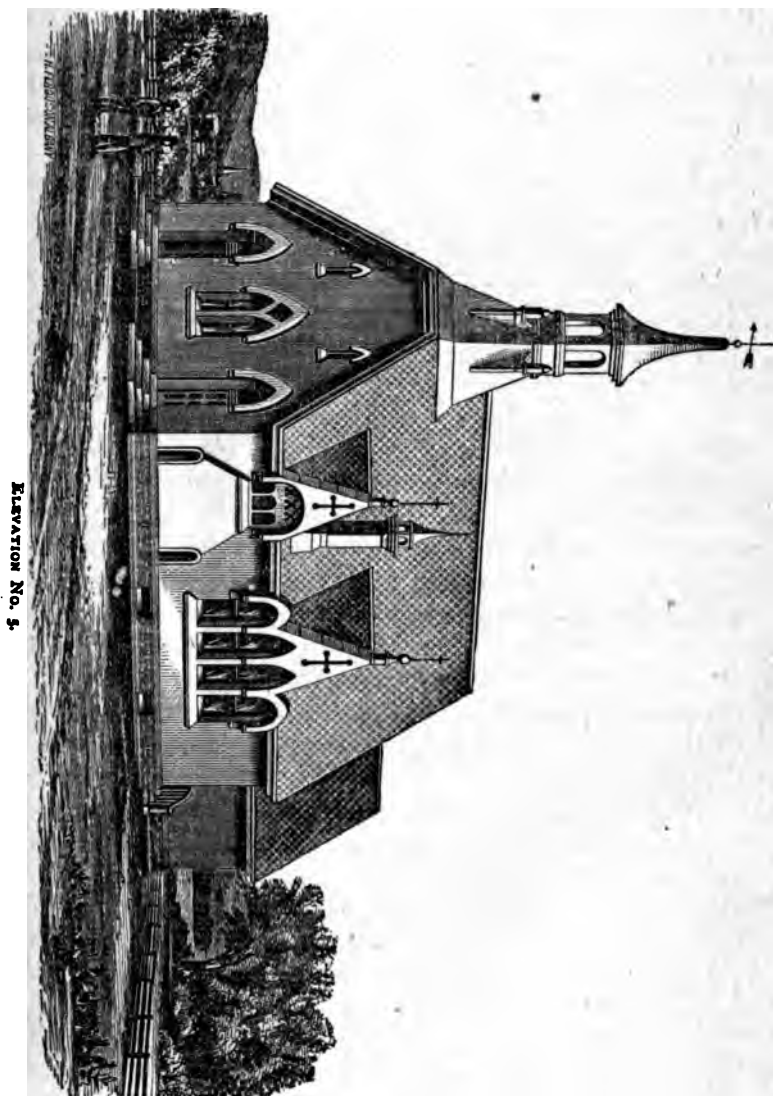
ELEVATION NO. 3.—This elevation is similar to the last, the changes being mainly in detail. The window-heads are square instead of circular, and narrow ornamental hoods are placed above the windows and doors. The windows of No. 2 may be used, if preferred. The main feature of difference is the cupola, which apparently grows out of the structure beneath, and hence is an integral part of it; while in No. 2 the cupola seems to be put in such a way that it is not an essential part. The materials of the building should be brick, and it would appear much better to have the roof and base of the cupola covered with slate.

ELEVATION NO. 4.—This is an ornamental design for village and suburban places. The cupola is light and elegant, and a gable is thrown up over the windows to give a greater architectural effect. The chimney is projected outside of the main wall, to break the monotony of the blank wall between the windows and the front corner of the building. The materials may be brick or stone. By the introduction of the gable over the windows, the walls are made lower, and the roof comes much nearer the ground than in the other designs. Instead of a cornice, the gables are finished with a coping of stone or of wood covered with tin.

This elevation would make an elegant design for a country church. Its fine architectural appearance is owing entirely to the general style of finish, the proportions observed, and the disposition of its several parts. No one feature has been added for mere ornament, though each of the necessary parts has been made ornamental. The roof should be of slate.

ELEVATION NO. 5.—This elevation represents another ornamental brick or stone building, with a slate roof. The cupola, like that of No. 3, is made to grow out of the struc-

ture. The windows and doors have pointed Gothic arches, and over each of the side windows a gable has been erected. The whole grouping produces a very pleasant effect, and



the design would make a most excellent school-house or a snug little church.

In erecting structures of this kind, great care must be

taken to make the foundation secure. The underpinning should be laid upon concrete, and placed below the action of frost. The stone should be laid in hydraulic cement, and every care taken that the whole foundation should be of sufficient strength to support the weight which must rest upon it.

Objection is sometimes made to the erection of school-houses with cupolas and fine windows and doors, because they look so much like churches. This objection, however, is far from being a logical one. The school and the church are both engaged in the same work, and they are complementary rather than antagonistic. There is, therefore, no good reason why the fine forms invented to ornament places of worship should not be considered as legitimate when used to ornament places of instruction. As a work of art, and as an elevating influence in a community, a fine architectural structure would be the same in either case; but in a school-house its beauty would have a more practical and enduring influence, as it would become intimately associated with the impressible hearts of childhood.



*SCHOOL MACHINERY.**

HOW shall the masses be educated? is a question which just now, perhaps more than any other, occupies the public thought.

That in some way this must be accomplished, seems no longer to be doubted by any thoughtful person. The lower classes, sunk in ignorance, in physical and moral degradation, are seen to threaten with serious danger the future of our country; and a wise statesmanship, as well as true philanthropy, plead earnestly for their enlightenment. The public school, it is urged, must penetrate this darkness, must dispel this ignorance, must secure, by the authority of law if need be, the early years of every future citizen, and prepare him to meet intelligently the responsibilities of a

* A PAPER read before a State Teachers' Association. Published by request.

ree government. Thus our public school, which has already accomplished so much, is yet to become the most potent factor of our national life.

It is pertinent then to inquire a little into the nature of our public school system, whether it is the one best adapted to secure the end desired, what are its defects and how they may be remedied. Whatever may be the intrinsic excellence of other systems, however superior in some respects they may be to our own, yet I suppose it may fairly be assumed that an institution which has grown up with our country is, in its essential character, the one best adapted to its needs, and that therefore no fundamental change in our system is desirable, even if it were possible.

The most casual glance at the history of the past few years will suffice to show us, too, what vast improvements have been made in all that pertains to the organization, discipline and furnishing of the school. The old-time school-house, notorious for its ugliness, is giving place to finer buildings; while for the comfort and beauty of the school-room we have improved desks and settees, improved maps and charts, improved slates and globes, and improved text-books good enough and numerous enough for us to quarrel over till the end of time. In short, in all the paraphernalia of the school, from the children's picture cards to the most elaborate scientific apparatus, we are certainly far in advance of anything in our own past, and are said to be far in advance of other nations.

But just here, it seems to me, in the line of our greatest excellence, lies our greatest defect and our greatest danger. In looking so closely after the mechanism of education, we have lost something of the life and spirit of our teaching. Our methods are tending more and more to become formal, mechanical and superficial. We secure fine recitations, it may be, but we fail to train our pupils to independent thinking. And here, that facts may speak for themselves, I trust I shall be pardoned for alluding to my own experience. Not long ago, as I was at the house of a friend, she asked me if I would help her little boy in his arithmetic. The new ways of teaching, she said, were so different from the old, that she could not help him much.

I found the little fellow in tears over some examples, of which the following is a specimen: "A boy had 27 apples; to one companion he gave 5, to another 8, to another 3; how many had he left?" Thinking this neither beyond my own comprehension nor that of the child, I tried to help him; but seeing still the troubled look, I said, "Don't you understand it?" "Understand it? Of course I do! but that ain't *getting* it; we have to say over some words, and I don't know what they are." Of course I could not tell him the exact form of words in which his teacher required him to say it, and so I had to let him go. Nor is this a solitary instance to prove that in much of our teaching the form is made of undue importance. A lady of fine intelligence and genuine culture told me recently that she was deprived of the pleasure of helping her children in mathematics, because the new methods of explaining are so different from the old. "Now," she said, "it seems to me that any method is right which reasons correctly upon the principles involved; but whenever I try to help them, they say, 'No, Mother, that isn't the way the teacher tells us we must say it.'" And who of us has not attended many a dreary examination where all the pupils would grind off their explanations in precisely the same words, with exactly the same inflections, and after an immense amount of verbage, bring out the triumphant *therefore* at the close, all making a grand show, if only one admires uniformity and a smooth flow of words more than anything else!

But if there is any power that ought to be cultivated in school, it is the power to discriminate between what is worth learning and what is not; between the essence or kernel of truth and the husk which may enclose it. If the mind is forced to take in both wheat and chaff, both will doubtless be undigested, and the healthful growth of the mind be effectually prevented.

Moreover, it takes away from the pupil more than half the pleasure of study, to cramp him with unnecessary restrictions as to methods. Provided he understand the principles, his thought is essentially the same as the teacher's, but the form of the thought will be different; and it is worth something to a boy, it stimulates his self-respect, to know that his

own thought, as it comes fresh from his own mind, is good just as it is, without being dressed in any other person's clothes. And a teacher who has taught from the books some verbose and clumsy methods, may often learn something from the simplicity and directness of a child's expression. For that method is undeniably best which states the principles most clearly, and reaches the conclusion with fewest words.

I have a little friend who never recites handsomely, and is always called dull at school; but one day he came home radiant with triumph over the conquered multiplication table, and eager to have us test his newly acquired powers. "How much is eight times seven?" some one asked. "O, I hain't got beyond the fives; but wait a minute, I guess I can tell;" then, after a few minutes of quiet thinking—"It's fifty-six, ain't it?" "Yes, how did you know if you hadn't learned the sevens or eights?" "Well, I s'pose eight times seven would be twice as much as four times seven, and I know the fours; so I added two twenties and two eights."

Now, we have all of us had such children in our classes, full of quaint, original ways of doing things, but who are slow in apprehending the thought of another, and who have a poor memory for words. Such pupils are always discouraged, and bright ones are unutterably wearied by this dead level method of teaching. Nor is this method accidental; it inheres in the very nature of the system which favors excessive routine and machine work of every sort.

And it grows naturally out of the intensity of the system, which is another of its prominent defects. Every one knows that it takes time for those mental processes by which we arrive at new conceptions of truth. But we crowd so many studies, so much work upon the children that we cannot wait for these slow processes of mental growth; we cannot give them time to form clear conceptions of their own: and so, forsooth, in order to get them through the course, we compel them to commit and recite the *words* which, though they may represent ideas to us, are to them but as the gibberish of an unknown tongue.

We give to our classes a text-book to be finished in a certain time; but the time is too short, and at its close their

vague, half-formed conceptions of the subject are speedily crowded out by a new set equally vague and ill-formed ;—these in turn to give place to others of their kind, until at last the mind has lost its power to form a clear, distinct conception, because, alas ! it has never formed one.

Now, we cannot too often call to mind the fact that the school is not a cramming machine to which pupils are sent to be stuffed with facts, or even with knowledge of any sort ; that their main business is not to gain knowledge but to gain the power to gain it. And that it becomes of the utmost importance, not *what* they learn but *how* they learn it. Let the power to form conceptions clearly, to retain them permanently and apply them correctly,—let this power be developed and disciplined, and it matters but little that our pupils make but a poor show at examination ; it matters little that they carry away but a small supply of facts in physical science, in history, or in literature.

For intellectual power, properly cultivated, will make its own acquisitions in after life ; and it will make them all the more surely and rapidly, if it is not too much forced and crowded in its early development.

We run to extremes in every thing. Not long ago our State awoke to the startling fact that our pupils were leaving school in shameful ignorance of every thing pertaining to the geography and history of Vermont.

Thereupon a text-book was put into our schools, and in some of them the teachers, not content with making the pupils learn the main facts, compelled them to commit the names of all the towns in every county in their proper order, and to bound them all.

A few years ago the organization of our schools was wretched enough ; now they are graded as perfectly as a stair-case, where every step exists only as a means to reach the next higher.

What matters it that some clear-eyed teacher, surveying her class all ready for promotion, sees three or four nervous, restless, puny little things, whose minds are growing faster than their bodies, and knows that to send them up will ensure their certain harm ? What avails it that she pleads for liberty to keep them back ? Parental vanity will not

hear a word ; the committee are satisfied if the required examination is passed ; and so the children are hurried along, and the little mind, fearfully and wonderfully made by God, is fearfully marred by such wretched treatment.

And the very slow ones are not less injured by the same process. A slow child is not, therefore, a fool ; there is often more latent power in him than in one of quicker wits, but it often remains forever latent, because its growth is checked by over-pressure at the very outset.

It is doubtless true that this evil of excessive gradation does not at present exist in most of our Vermont schools, but it is an inevitable tendency of the system, against which we do well to guard, lest there come before long too strong reaction in the opposite direction.

Now, many of our teachers are enthusiastic lovers of their true work, and delight in it with all their heart. Nearly all of them have a higher ideal than they ever expect to realize, and the perpetual presence of this ideal is ever stimulating them to better work. They know their own faults better than any one else knows them, and the pleasure of past success is quickly banished by the pain of conscious imperfection. But what can they do about it ? The ablest of them all cannot put more than twenty-four hours into the day, nor into one day more than the work of two. Any one who has ever tried it knows that five hours of thorough teaching are enough to exhaust the nervous energy of any ordinary person. Add to these the sixth, which is the last straw ; then add a long evening of labor, protracted far into the night, labor, too, most of it, on the mere machinery of the school, making out reports, etc. ; continue this week after week and year after year, until all the vitality is sapped out of the teacher ; then take him some morning, as he is about to enter school, wearied with past labor and burdened with a sense of his unfitness for the work that ought to be done, and tell him, out of some Teacher's Manual, that cheerfulness and enthusiasm are essential to success, and he will recall, with a grim smile, the famous advice to the dyspeptic, to eat his food with hilarity, no matter what happens.

He may, by sheer strength of will, galvanize himself into

a show of life for awhile; but the laws of nature will have their way; he will surely fall back into the lifeless routine of the tread-mill, and in time will verify the truth of the old adage, "All work and no play makes Jack a dull boy." Nothing can keep him out of the ruts except vigorous mental growth, and he cannot grow under such conditions.

And *she* cannot grow, for though we use the masculine pronoun out of deference to the grammar, yet we all know that what has been said of men applies with more force to women, because their power of endurance is less, and because they have most of them left school with an education far inferior to a man's, and so with far less fitness for their work—mere girls, who yet have very strong aspirations for the highest excellence.

Now where lies the remedy for all these defects? We can only hint at it. The school is but a reflection of the community where it exists: so long as people like this showy mechanism of our schools, so long they will have it; and the school, in turn, will foster in the community this love of show and this strange confounding of the semblance and the reality of true progress.

The fibres that bind together school and family and church and State are living tissues, and the same life-blood flows in them all. And who shall say how much of the shameful corruption, so prevalent in high places, is only the natural fruit of that old preaching, "Go to school, boys: be diligent and study hard, for other boys who have been faithful and industrious are now in Congress and the White House!" Let a boy but fire his heart upon some object as the end of all his efforts, let him be taught to consider honesty and fidelity but as means to the end, and he will speedily lose sight of the means; he will find others quicker and surer, and the end he will obtain at whatever cost. But we must change all this. Christian parents must consecrate themselves and their children with more singleness of aim and earnestness of purpose to the highest ends of human living. The boy and the girl must be taught at home that the school stands, and their part in it stands, for ends not less grand than do the sun and moon and stars, for the developing and perfecting of a man and woman after the

largest, noblest pattern. Then we shall be likely to see fewer men of mature age and fine intellect so pleased with the rattle of popular applause, so tickled with the straw of presidential office. Let Christian people everywhere cultivate with more diligence a true Christian simplicity—a simplicity which is perfectly consistent with the most complete forms of civilization, for its source is not in outward things: but springing from a profound love of truth it moulds and fashions all its surroundings in accordance with the hidden harmonies of its own wondrous beauty. Then let them clear away from our schools this clumsy machinery that has been built up around them, and give the teacher more time for self-culture, more freedom for growth, more scope for enthusiasm.

Then shall our boys and girls, catching the inspiration of parents and teachers, grow up silently and steadily, with no stroke of hammer or noise of machinery, into beautiful, living temples, whose foundations shall stand fast forever, and whose indwelling glory shall be the Lord our God.

M. A. B.

DOVES IN PEKIN.

THE city of Peking abounds with doves, which are profitable to the owners as food. Formerly they were preyed upon by vultures, which are exceedingly numerous also; that it would have been literally impossible to have protected the pigeons against the exterminating warfare of a cruel enemy, had not a lucky mechanical contrivance been devised for their security. The Chinese make small whistles that give a shrill sound held against the wind, which are fastened to the tails of the birds just as they are ready to be weaned. Fly which way they may, the little organ pipe screams lustily without impeding the bearers; for go as they choose—the swifter the better for the whistle—they frighten their old vagabond destroyers prodigiously, which flee as fast as their wings will carry them when they hear an approaching whistle. Is this science or art?

EMINENT TEACHERS DECEASED IN 1872.

WITH Mr. JAMES GORDON BENNETT, died June 1, teaching was but a minor and temporary incident of his somewhat eventful life, and inasmuch as his school in Ann St., N. Y., some forty years ago, was too small to be profitable, we can hardly rank him among either the eminent or successful teachers.

With Rev. HENRY MARTYN COLTON, who died at Middletown, Conn., June 2d, teaching was a profession deliberately entered upon and continued till death. He was born in Royalton, Niagara Co., N. Y., Nov. 5, 1826, graduated from Yale College in 1848, as Berkley Scholar, remained in New Haven a year after graduation, studying philosophy and language, took the usual theological course in Yale Theol. Seminary, was ordained as a Congregational minister in 1852, was five years in the pastorate in Woodstock and East Avon, Conn., and in May, 1857, established a classical school in Middletown, which he continued under his supervision for eleven years. In Sept., 1858, he opened the "Yale School for Boys" in New York city, which he was still conducting at the time of his death. He had a very high reputation as a classical teacher.

Miss MARY KELLOGG, who died at Great Barrington, Mass., June 26, at the advanced age of 83 years, had been another teacher by profession. She had spent her youth as a successful teacher, and in the prime of her powers and abilities associated her two sisters with her, and for more than twenty-five years conducted a female seminary of very high reputation at Great Barrington. "Miss Kellogg's Seminary" was twenty years ago regarded as the best in that region.

ZENAS MONTAGUE PHELPS, A. M., who died at Amherst, Mass., July 4, at the age of 61 years, had been for more than thirty years a teacher. He graduated from Williams College in 1839, and after considerable experience in teaching became associate principal of Mount Pleasant Military Academy at Sing Sing, N. Y. Here he taught for many years,

having some of our most eminent men as his pupils. Some years since he removed to Amherst, Mass., and taught there till his health failed.

Rev. PAUL TRAPIER, D.D., who died in Baltimore, Md., July 12, was an Episcopal clergyman, of South Carolina, a zealous friend of denominational education, and had been for several years a Professor in the Episcopal Theological Seminary of S. C.

First Assistant Engineer W. H. G. WEST, U. S. N., who died at Cape May July 19, had been eleven years in the naval service, six of which had been passed at the Naval Academy at Annapolis as Assistant Professor of Mathematics. He was a native of England, but appointed to the navy from Pennsylvania, and had had a very thorough education before entering the service.

Hon. JESSE OLNEY, who died at Stratford, Conn., July 30th, at the age of 74 years, was for many years a practical and successful teacher, though most widely known as the author and compiler of many valuable text-books. He was born in Union, Tolland Co., Conn., Oct. 12, 1798, was a diligent student, and at the age of sixteen a good classical scholar, and very familiar with all of physical science which could then be acquired. He taught in his native county for some time, and was called thence to the Grammar School of the First District, Hartford, where he continued teaching with great success for twelve years. While thus engaged, he felt the want of a better school text-book on Geography than then existed, and was led to prepare his Geography and Atlas, first published in 1828, of which millions of copies were sold. He subsequently compiled the "National Preceptor," a valuable reading book, and followed this with a series of readers, histories, etc. Mr. Olney visited Europe twice to perfect himself in his favorite studies, and during his ten years' service in the Connecticut Legislature, was very efficient in improving the system of public schools in the State. In 1867 and 1868 he was Controller of Public Accounts for the State.

Rev. GEORGE W. EATON, D.D., LL.D., who died at Hamilton, N. Y., Aug. 3, had been a teacher for forty-three years.

He was born near Huntingdon, Pa., July 3, 1804, graduated from Union College, Schenectady, in 1829, and was immediately appointed a tutor. In 1831 he became Professor of Languages in Georgetown College, Kentucky, and in 1833 he became Professor of Mathematics and Natural Philosophy at Hamilton. Subsequently he filled the Professorships of Ecclesiastical and Civil History and of Systematic Theology, and the Presidency of Madison University and of the Hamilton Theological Seminary. He possessed a rare aptness in communicating instruction, and was greatly beloved as a teacher.

Rev. HENRY FOWLER, who died at Vineyard Haven, Mass., Aug. 4, at the age of 48 years, was Professor of Rhetoric and Political Economy in Rochester University for five years, but though successful as a teacher, he preferred the pulpit or the journalist's desk to the professor's chair. He was born in Stockbridge, Mass., in 1824, graduated from Williams College in 1847, and after five or six years of editorial and authorial experience, was elected Professor in 1853. From 1858 to 1872 he was a Presbyterian clergyman and pastor at Auburn, N. Y.

LOWELL MASON, Mus. Doc., who died at Orange, N. J., Aug. 11, in his 81st year, was the most conspicuous and successful teacher and composer of sacred music of the present century. He was born in Medfield, Mass., Jan. 8, 1812. He exhibited a passion for music while yet a mere child, and began to teach it at an early age. In the year 1812 he removed to Savannah, Ga., and during the time he lived in that city, about fifteen years, he devoted all his leisure hours to music. He published the celebrated "Boston Handel and Haydn Collection of Church Music" in 1821. He removed to Boston in 1827, and devoted himself with increased vigor to his favorite pursuit, and, associating himself with Mr. J. G. Webb, interested himself in the introduction of vocal music in the Boston public schools. Through his influence, vocal music received a new impulse in Boston and New England. In 1828 his attention was called to the Pestalozzian method of teaching, which after a thorough test he adopted. Dr. Mason visited Europe in 1837, and acquainted

himself with all the improvements in the musical teaching on the continent. In 1855 the University of New York conferred upon him the degree of Doctor of Music, the first musical degree conferred by an American college. He was the author and compiler of a greater number of musical works than any other American, many of them intended for the instruction and practice of the young.

Rev. THOMAS F. CURTIS, D.D., who died at Cambridge, Mass., Aug. 23d, aged 56 years, was of English birth, his father, Rev. Thomas Curtis, having been an eminent scholar, editor and author. He was educated in one of the southern colleges, either in South Carolina or Georgia, entered the ministry in the Baptist Church, was settled for some years in Massachusetts, and thence was called to a professorship of Theology and Ethics in Lewisburg University, Pa., about 1855. He resigned in 1865, and two years later removed to Cambridge, Mass., where he was for a time engaged in literary pursuits. He adopted rationalistic views in 1864 or 1865.

Gen. SYLVANUS THAYER, U.S.A., LL.D., A.A.S., who died at Braintree, Mass., Sept. 7th, was not only an eminent teacher but a liberal benefactor of education. He was born in 1785, graduated from Dartmouth College in 1807 and from the Military Academy, West Point, in 1808; was assistant professor at the Military Academy from 1809 to 1811; Superintendent of the Military Academy from 1817 to 1833; and several times visited Europe to examine the military schools there. He was in active service for fifty-five years and borne on the retired list for nine more. Besides large gifts for educational purposes during his life time, he bequeathed to Dartmouth College \$100,000 to endow the Thayer School of Engineering, which he had previously founded.

Rev. EPHRAIM D. SAUNDERS, D.D., who died in Philadelphia, Sept. 14, was for many years a teacher of extraordinary genius and ability, and in his last years the donor of a magnificent site and buildings for the Presbyterian Hospital in Philadelphia, and the active agent for raising money for its endowment. Dr. Saunders was born in

Morris Co., N. J., Oct. 31, 1809. He graduated from Yale College in 1831, studied theology, was for several years a pastor in Virginia, and afterwards at Pottstown, Pa. His health failing, he traveled for two or three years in Europe, and on his return established in West Philadelphia an Institute for Boys, where the training was very thorough and the grade of instruction very high. This school he maintained for fifteen or sixteen years, his son, Mr. Courtland Saunders, a most accomplished scholar, assisting him for several years, till he was slain in battle in the late civil war. In 1870 Dr. Saunders gave his fine property for a site for the hospital, and for which he secured endowments and subscriptions to the amount of \$400,000.

On the 23d of September, Rev. JAMES PATTERSON, D.D., a United Presbyterian clergyman, President of Westminster College at New Wilmington, Penn., from 1861 to 1868, died in New Wilmington.

On the 25th of September, Rev. A. B. LARSEN, a Baptist clergyman and pastor, Principal of the Ringoes, N. J., Academy, died at that place, aged 31 years.

In September, also, died Rev. LORENZO B. ALLEN, D.D., President for several years of Burlington University, Burlington, Iowa, and since 1865 Principal of a flourishing Female Seminary at Minneapolis, Minn., aged 60 years. He was a graduate from Waterville College (now Colby University), Maine, in 1835, studied theology at Newton Theological Institution, Mass., and was settled for nearly fifteen years in Maine as a pastor.

Rev. SAMUEL J. BROWNE, a Presbyterian clergyman in the neighborhood of Cincinnati, was not so far, as we are aware, a teacher, but he ranks among the benefactors of education deceased. He died in September, aged 85 years, leaving \$150,00 to found a University, to be called by his name, \$12,000 to build a chapel for it, and \$10,000 as a fund for the support of the teacher of a preparatory school. His will is, we believe, to be contested.

Rev. EDMUND TURNEY, D.D., an eminent scholar and theologian, who died at Washington, D. C., Sept. 28, at the

age of 56 years, had spent a large portion of his life in teaching. He graduated from Hamilton Literary and Theological Institution (now Madison University) in 1838, and from the theological department in 1840. In the same year he became a pastor in Hartford, Conn., in 1844 was called to Granville, Ohio, where he was a professor in the College and pastor of the Baptist church. In 1848 he was called to the pastorate of a Baptist church in Utica; in 1850 elected a professor in the theological department of Madison University, and in 1853 to the same chair in Fairmount Theological Seminary, Ohio. From 1863 to his death he was engaged in teaching the colored preachers and teachers in Washington, and had organized a Theological Institute and University for them, of which he was President.

Rev. FRANCIS VINTON, D.D., D.C.L., an eminent Episcopal clergyman and scholar, a graduate of West Point in 1830, and of the General Theological Seminary in New York in 1838; was better known as a pulpit orator, and one of the ministers of Trinity Church, than as a teacher; but he had been for some years Ludlow Professor of Ecclesiastical Polity and Common Law in the General Theological Seminary of the Prot. Episcopal Church in New York. He died in Brooklyn, Sept. 29, at the age of 64 years.

FRANCIS LIEBER, Ph. D., LL.D., who died in New York, Oct. 2, 1872, was equally celebrated as a publicist, author and teacher. Born in Berlin, Prussia, March 18, 1800, at fifteen a volunteer in the Prussian army, taking part in the battles at Ligny, Waterloo and Namur, two years later imprisoned as a Liberal, released, and a diligent student at Jena till the age of twenty-one, a participant in Byron's expedition for the independence of Greece, a friend and guest of Niebuhr, again a political prisoner at Kopnick, a private tutor and journalist in London, an emigrant to this country in 1827, a teacher and lecturer in Boston and New York, the editor of the *Encyclopedia Americana*, in thirteen volumes, from 1829 to 1833, and author of numerous other works, the author of the plan of instruction for Girard College in 1834, from 1835 to 1858, Professor of History and Political Economy in the College of South Carolina at Columbia, S. C.,

and from 1858 till his death, filling the same chair in Columbia College, N. Y., and a voluminous and very able writer on International and Military Law, Penal Law, and the various topics of political and social science, he had filled up the measure of his days with the highest usefulness.

On the 3d of October, Rev. W. H. MITCHELL, D.D., a clergyman of the Southern Presbyterian Church, who had devoted many years to teaching, died at Florence, Ala., aged 60 years. He was a native of Madison, Ga., graduated from Union College in 1831, studied theology, and was settled for some years in Accomac Co., Va. But he was very fond of teaching, and about 1845 removed South, and after teaching some years in Georgia, was called to the Presidency of the flourishing Female College at Florence, Ala., where he remained until his death.

Rev. WENHAM KIDDER, a Baptist clergyman, who died in Washington, Fayette Co., Ohio, Oct. 4, at the age of 38 years, was, at the time of his death, Professor of Music in Ghent College, Ky. He was born in New York City, and was educated in Rochester, and in New York City graduating from the New York University. He had been pastor for some years in Pennsylvania, and afterwards in Ohio, and had but recently entered upon his professorship at Ghent.

Hon. HENRY CHAMPION DEMING, scholar, professor, author, soldier, politician and statesman, who died at Hartford, Ct., at the age of 57 years, was not permanently attached to the teachers' profession, though he was for some years a college professor in the South. He had been, however, in his varied career, an active promoter of education. Nor could it be said with truth, that WILLIAM H. SEWARD, our great statesman, who died Oct. 10, was a teacher by profession, though he devoted several years after graduation to teaching in Georgia. It was with him, as with so many others, but the stepping stone to another profession. Yet he, too, as Governor and U. S. Senator, and indeed throughout his career, was an active promoter of, and benefactor to, education.

Rev. SAMUEL SEABURY, D.D., who died on the same day in New York City, at the age of 72 years, was a grandson of Bishop Seabury, of Connecticut, was a scholarly man, and had been for many years a professor in the General Theological Seminary of the Episcopal Church in New York City.

Prof. JOHN W. FRAZER, the able and accomplished professor of Chemistry in the University of Pennsylvania, the successor of the illustrious Prof. Hare, died at the age of 63, in the new building of the University in Philadelphia, on the 13th of Oct., as he was entering his apartments there. He was a native of England, but had filled that professorship for thirty years, lecturing and teaching also at the *Franklin Institute*, and editing the *Journal of the Institute*.

JOHN PIERCE BRUCE, who died in Litchfield, Conn., Oct. 18, at the age of 74 years, though for some years a journalist and author, was one of those men with whom teaching is not simply a profession, but a passion. For a period of more than twenty years he was the principal of the Litchfield and the Hartford Female Seminaries, and taught of our honorable and notable men, not a few. He possessed that enthusiasm in teaching, that magnetic power over his pupils, and that fullness of knowledge which made even the deepest study charming. He was indeed a prince of teachers.

Rev. KENDRICK METCALF, D.D., an Episcopal clergyman, who died at Geneva, N. Y., on the 30th of Oct., was the senior professor in Hobart College, Geneva, and had been a professor there for more than twenty years.

Mrs. MARY YOUNG CHENEY GREELEY, wife of Horace Greeley, who died in New York, Oct. 30, at the age of 58, had been a pupil of Mr. John P. Brace, and at the age of about 18 came to New York City and opened a Young Ladies' School, which was remarkably successful. Two years later she was compelled, by threatened pulmonary disease, to go to Warrenton, N. C., where she again established a school of high grade, which she conducted with great success till her marriage in 1836.

Miss OLIVE A. BAKER, who died in West Philadelphia in Oct., was an accomplished teacher who had, for nineteen years, been at the head of one of our best schools for young ladies in that city.

Rev. STILES MELLICHAMP, a Presbyterian clergyman, who died at Orangeburg, S. C., in Oct., had been, before his settlement at Orangeburg, Adjunct Professor of Languages in Charleston College for several years.

JAMES HADLEY, LL.D., Professor of Greek Language and Literature in Yale College, who died in New Haven, Nov. 14, was not only one of the ablest teachers but one of the most accomplished scholars of our age. He was born in New Fairfield, Herkimer Co., N. Y., March 30, 1821. He received his preparation for college in Geneva, N. Y., and graduated from Yale College in 1842. He continued his studies in the College except when, for a brief period, he acted as tutor in Middlebury College, Vermont; and in 1845 joined the Yale Faculty as Assistant Professor in Greek. In 1851, ex-President Woolsey resigned the Professorship of Greek, and Prof. Hadley was appointed to that chair. In 1860, the Professor published a "Greek Grammar for Schools and Colleges," founded on a similar work by Prof. George Curtius, in Germany; and in 1869, an abridgment under the name of "Elements of the Greek Language." Prof. Hadley contributed articles to various scientific and literary periodicals, especially to the *New-Englander*. He was an active member of the American Oriental Society, and was the President thereof at the time of his death. Beside his varied linguistic attainments, he was well versed in civil law, and his course of lectures on that subject was included in the curriculum of the Yale Law School, and was also delivered at Harvard. He attained excellence in whatever branch of study he pursued, and possessed wise, discriminating judgment, which gave great weight to his opinions. His private character was pure and amiable, and he was deservedly held in esteem by the Faculty and students.

Rev. JOSIAH BREWER, who died in Stockbridge, Mass., Nov. 19, was a graduate of Yale College in 1821, was a tutor

there for several years, and in 1830 sailed for Constantinople as a Missionary of the American Board. He returned to this country about 1840, and for the next twenty-five years was at the head of female seminaries in Middletown, Ct., and New Haven. He was regarded as a successful and able teacher.

Miss S. AGNES KUMMER, who died at Baltimore in November, was one of those admirable teachers trained under the direction of the Moravians at Bethlehem, Penn. She was a native of that beautiful Moravian village, and after receiving a very thorough education, in the Moravian school, of which the art of teaching formed a part, she went to Baltimore, and there, nearly thirty years since, founded the Edgeworth school for girls. Of this school she was principal till her death. The *Baltimore Sun* well says of her: "Her untiring labors in the cause of education and the development of those traits that make the American woman so highly honored, have won for her a name that will be long and lovingly remembered by a host of admiring friends."

Rev. CHARLES SQUIRE DOD, D.D., who died at Centreville, La., on the 23d of Nov., had been for many years actively engaged in teaching. He graduated from Princeton College in 1833, and from the Theological Seminary in 1836, was for a short time in the pastorate. He was then called to the professorship of Mathematics and Recent Languages in Jefferson College, where he remained for more than fifteen years. He was next offered and accepted the Presidency of the Western University of Tennessee. During the war he went further South, and had for some years been connected with one of the Louisiana Colleges; and preached at the same time as a stated supply to Presbyterian Churches in that State.

HORACE GREELEY, who died Nov. 29, had never been a teacher, so far as we can learn, but he deserves a place in this record not only for his constant efforts in his paper for the promotion of education, but for his liberal benefactions to it. From his moderate wealth he had given \$10,000 to Canton University, St. Lawrence Co., the same to Buchtel

College, Akron, Ohio, and smaller sums almost constantly to colleges, seminaries and schools without number. He was very liberal in his contributions for the education of the Freedmen. ,

Rev. ABNER W. HENDERSON, A.M., a Presbyterian clergyman, who died at Thomaston, Ill., in Nov., at the age of 62 years, was a graduate of Union College in 1829, and after passing through a Theological course, settled in the ministry in Illinois; but after a few years removed to Chicago, where he established an excellent Female Seminary, of which he was Principal for nearly twenty years. He then went to Europe for his health, and resided there for four or five years, and on his return built up a new church at Thomaston and became its pastor.

Rev. HUBBELL LOOMIS, D.D., who died at Upper Alton, Ill., Dec. 17, at the advanced age of 97 years, was a teacher for a considerable portion of his long life. He was a graduate from Union College in 1799, taught for several years after graduation, and then entered upon the ministry in the Congregational Church, and was settled at Wellington, Tolland Co., Conn. Here he taught for some years in connection with his pastorate. His views having undergone a change he united with the Baptists, and some years later removed to Illinois, where, in 1832, he became President of Shurtliff College, Upper Alton, Ill. He remained in this position for somewhat more than twenty years, when he retired from active duties. Dr. Loomis was, for his time, a remarkably skillful physicist.

Mrs. M. ANNETTE STRONG GUTHRIE, who died in Zanesville, Ohio, Dec. 23, aged 39 years, had been for several years before her marriage the Principal of a flourishing Female Seminary.

On the 26th of December, Prof. ALFRED GREENLEAF died in Brooklyn, aged 68 years. He was born in Newburyport, Mass., in 1804, educated at Dartmouth College, taught for two years at Marblehead, Mass., for ten or twelve at the Franklin Hall School, Salem, and in 1838 removed to Brooklyn to take charge of a Female Seminary, which he

conducted with signal ability for twenty-two years, and which was attended by many hundreds of young ladies who now testify to his rare skill and tact as a teacher. In 1860 he relinquished his connection with the seminary, but continued till his death to take a deep interest in all educational matters.

GEOGRAPHICAL NOTES.

UNITED STATES.—The difficulties under which the public labors in getting information, are well illustrated in the blunders made by a New York daily paper in reporting Judge Daly's annual address before the American Geographical Society (Feb. 17). *Wintaw* for Uintah Mts.; *Alention* for Aleutian Islands; *Lay* Smith for Leigh Smith; *Schwumfurth* for Schweinfurth—are specimen errors, of which some appear as if caused by ear, while others are perhaps due to copying obscure manuscript. Of this latter kind is evidently the substitution of *Oplin* for Ophir, in giving an account of Carl Mauch's discoveries in Southern Africa (see the Notes of May, 1872). The story was already stale when some Western editor met with it for the first time, and, in cooking it over, gave the compositor an excuse for making *plin* out of *phir*. Other editors, in clipping out the item, reproduced the blunder, which has thus been going the round as a piece of news! A like want of intelligence in editing has also been shown in the fresh currency given to the absurd story about M. Pavy and his adventures in Wrangell's Land. This even imposed upon the conductors of *Nature*, after having escaped the criticism of the *London Times*, and coming back to this country with the English scientific stamp upon it, was caught up and repeated in spite of the frequent exposure of the fiction some months ago. As usual, the lie travels its leagues while the truth is putting on its boots; and the truth is, we believe, that M. Pavy has never left San Francisco.

—In the Collections of the Wisconsin Historical Society, Vol. VI., is reprinted a narrative by Samuel A. Storrow, of

Massachusetts, of a visit which he made to the North-west in 1817. The following passage occurs on p. 180. Written before the city of Chicago was dreamt of, it foreshadows the improvement which has taken place within the past few years, by which the Chicago River has been turned into a canal, flowing in the opposite direction, and passing the waters of Lake Michigan into those which seek the Gulf *via* the Mississippi. We may remark the interpretation of the word *Chicago* as differing from that which now prevails (*i. e.* skunk; whence, in games of skill, the euphemism "to chicao.") The Louisiana referred to is that depicted on the historical chart in the late Census, viz., all the region west of the Mississippi from the Delta to Oregon, though already Louisiana had been admitted as a State, and Missouri had been organized as a Territory:

"The river Chicago (or, in English, Wild Onion river) is deep, and about forty yards in width; before it enters the Lake, its two branches unite—the one proceeding from the north, the other from the west, where it takes its rise in the fountain of the De Plein, or Illinois, which flows in an opposite direction. The source of these two rivers illustrates the geographical phenomenon of a reservoir on the very summit of a dividing ridge. In the autumn, they are both without any apparent fountain, but are formed within a mile and a half of each other by some imperceptible undulations of the parairie (*sic*), which drain it and lead to different directions. But in the spring, the space between the two is a single sheet of water, the common reservoir of both, in the centre of which there is no current towards either of the opposite streams. This circumstance creates the singular fact of the insulation of all the United States, excepting Louisiana, making the circumnavigation of them practicable, from the Gulf of St. Lawrence to that of Mexico, with the single hindrance of the Falls of Niagara.

"The Chicago forms a third partition of the great country I had passed. The Ouisconsin and Fox Rivers make a water communication between the Mississippi and Michigan, with the exception of four miles. The Millwackie and *River a la Roche* the same, with half the exception. The Chicago and De Plein make, in the manner I have described, the communication entire. This latter should not escape national attention. The ground between the two is without rocks, and, with little labor, would admit of a permanent connection between the waters of the Illinois and Michigan."

EUROPE.—The number of books of voyages, travels, and geographical research published in 1872, according to the London *Publishers' Circular*, was 251, of which 172 are

classified as "new," 52 as "new editions," and 27 as "American importations." This is larger than the total of the previous year (233), though the American importations were exactly the same. (See the Notes for April, 1872.)

ASIA.—The longitude of Teheran has recently been determined by Col. Walker, of the Indian Trigonometrical Survey, and Major St. John, of the Persian Telegraph Office, by means of the Indo-European telegraph, Col. Walker being in London. Though the line is 3870 miles long, and in spite of automatic relays and five repeating stations, the delay in signalling both ways averaged less than half a second. The meridian of Teheran thus ascertained is $51^{\circ} 24' 5''$ E.—a result remarkably in agreement with one previously obtained by Major St. John. Connecting it with other telegraphic and trigonometric determinations, he fixed the meridian of Madras at $80^{\circ} 14' 20''$ E.

—To the *Cornhill Magazine* for January, Mr. W. Gifford Palgrave contributes some curious "Anatolian Spectre Stories," from which we extract the following description of Trebizond:

"An old half-ruined city, a wide extent of crumbling walls and desolate towers, a confused relic-heap of successive histories and creeds, Pontine, Greek, Roman, Byzantine and Turk; within, accumulated memories of violence, crime, and bloodshed; without, wild surroundings of dark mountain glen, trackless forest, and melancholy sea,—for melancholy the leaden mist-covered Black Sea is, even more than the Irish Channel or the Atlantic.....The parallelogram of precipitous rock whence Trebizond derives its name, is separated on its western side from the continuity of the coast by a deep valley, or rather ravine, called Xenos. On its eastern margin rise the lofty, though half-ruined walls of the old fortress, the work of the Comnenian Emperors; while its western brink is overshadowed by the gigantic cypress-trees of a large Turkish burial-ground, where, amid countless tombs of every date, reposes under a separate cupola the ambitious mother of Sultan Seleem, conqueror of Syria and Egypt. Just without the cemetery enclosure, between it and the Xenos ravine, stands a small 'hammam,' or warm bath, of the description so common in the East for the use of the adjoining town-quarter. The suburb, further on, exchanges its name of Xenos for that of Pharos; probably a reminiscence of some old lighthouse which may once have stood on the rocky spur of cliff here jutting out into the sea, and sheltering the shallow harbor of Hadrian, now disused; but

of such a building no vestige now remains except the name. But immediately behind the bath rises a confused mass of shattered walls and towers, the relics of a Byzantine out-work that formerly guarded the eastern [western ?] extremity of the bridge by which access is given across the deep ravine to the castle of Trebizond ; and all along up the rapid slope and down the rocky beach, a wilderness of quaint houses and huts, mostly dilapidated, scattered irregularly amidst unpruned orchard-gardens and tall plane trees, with narrow winding paths here and there between high stone walls, neglected fountains, fallen tombstones, among rank hemlock, grass, and brier ; such is this very picturesque, but not very lively or enlivening suburb. Every nook of it is haunted, say the inhabitants ; but the goblin resort of predilection is, all agree, the ' hammam,' or bath."

—A Russian officer, versed in the photographic art, was despatched in the course of last year by the Governor-General of Russian Turkestan to take photographs of scenery, ruins, persons, etc., in Khokan, the Khan having incautiously expressed a wish to have some taken of himself and family. Kriftsoff furnishes an amusing account of his experiences on this mission, to the *Turkestanskaia Vidomoski* (Turkestan Gazette) of Tashkend. The Khan, having repented of his rash wish, at first opposed the mandates of his religion to the accomplishment of the artist's purpose ; who, however, obtained permission just to show him how photographs were taken, which certainly could not be unlawful. The Khan watched the entire process with the greatest interest, and allowed the operator to go from one step to another till he had secured portraits of almost all his household, ending finally with a promise to sit himself with his suite, as soon as Kriftsoff should return from a little excursion.

AFRICA.—Dr. Schweinfurth, whose return to Europe we chronicled in the May Notes, reported himself to the Berlin Geographical Society at its session of June 29 (see the abstract of his remarks in the Society's *Journal*, No. 39.) No. 41 of the *Journal* contains his Niam-Niam diary in full, and gives besides a minute map of the interesting region traversed. Schweinfurth's route is also indicated on the map showing Livingstone's later discoveries in the *Tour du Monde* (last issue of 1872.) This daring explorer, after some years of training in Nubia on the Red Sea and on the Blue Nile, was

despatched in 1868 by the trustees of the Humboldt Fund to the region already passed over by the ill-fated Miss Tinné. On the 18th of August, he embarked for Suakim, whence he crossed over to Khartum, arriving by the end of November. The Governor-General of the Soudan was very friendly, and negotiations were successfully opened with an ivory-trader, Ghattas, to whose fortunes Schweinfurth attached himself. They set out Jan. 5, 1869, for the scene of their operations, the Bahr-el-Ghasal, tributary of the Bahr-el-Arab. For twenty-two days they sailed up this stream to the head of navigation, Meshera, just beyond the junction of the Djur, which became the Doctor's headquarters. This place is in the country of the Dinka, who contrast strongly with the tribes further south and west. These he visited in 1870, setting out at the end of January, and coming to the Niam-Niam he found them a very original people, with their hair let down to their waists, great eyes far apart, and noses as broad as they are long; height middling, the legs being rather short in proportion to the body. They sharpen their canines to a point as an instrument of warfare as well as for service in their cannibal repasts. Hunting and fishing furnish them food; of cultivation they do little. The Monbuttu live south of the Niam-Niam, beginning at 4° N., on the further side of the Welle. This river is supposed by Schweinfurth to flow into Lake Tchad. They are even greater cannibals than their neighbors, and physically and socially are a more striking people. Still further south are the Akka, a nation of dwarfs, one of whom Schweinfurth nearly succeeded in bringing back with him. In 1871 a second visit was made to the Niam-Niam, when, Dec. 1, a fire destroyed the dépôt of Ghattas, including most of Schweinfurth's precious collections. At the same time the traders met with a repulse, and retreat became necessary. Six months were still spent in the valley of the Bahr-el-Ghasal, and were used in making excursions to the west among tribes that have been terribly reduced by the slave trade. June 8, Schweinfurth began the descent of the Nile, reaching Khartum on July 27. Sept. 26 he embarked at Suakim, and Nov. 2 arrived at Messina.

—George Schweinfurth and David Livingstone have working at the same time and from opposite directions, let so small a *terra incognita* in Central Africa that the German, with an admirable grasp of the situation, have organized a association for the express purpose of exploring the territory between the Monbuttu and the Balegga, or, in other words, between the rivers Welle and Lualaba. The various geographical societies in Germany (see a list of them in the February Notes) have united in lending support to this undertaking, and have invited the coöperation of scientific bodies likely to be interested in the results of such explorations, and of all friends of geographical knowledge. The association will be known as the "African Society." Its first expedition will probably be by way of the Loang Coast. Meantime, Lieut. Grandy, leader of the Livingston Congo Expedition, has reached Sierra Leone (Dec. 14, 1872) and gathered his party, including his brother M. B. Grandy, two Congo men as interpreters, and nineteen Kroomen, with Daniel E. Gabbidon, "a steady native from the police." They set out for the South Coast Dec. 27.

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Years in Central Africa. London, 1873.—TROLLOPE, ANTHONY. Australia and New Zealand. London, 1873.—VAMBERY, ARMINIUS. History of Bokhara from the Earliest Period down to the Present. London, 1873. (See review in the *Athenæum* of Jan. 25.)—WELLS, Captain. Voyage to Spitzbergen. London, 1873.—WOOD, Capt. JOHN. Journey to the Source of the River Oxus. New ed. With an essay on the Valley of the Oxus, by Col. Henry Yule. London, 1873.

Cartography.—Petermann's *Mittheilungen* for January contains the best map yet published of the Livingstone-Stanley explorations; also a complete map of the explorations in Northern Siberia between long. 81° and 131° E.—*i. e.* from the mouth of the Yenesei to that of the Lena River—from 1736 to 1843. Dr. Petermann discusses in the text the Nile-Congo probabilities as derivable from Livingstone's own narrative. Supplement No. 34 of the *Mittheilungen*, which is entirely devoted to Gerhard Rohlfs' journey through North Africa to Lagos, has two maps—one showing the country south of Lake Tchad, closely bordering on the scene of Schweinfurth's recent achievements; the other giving the traveler's route from Cudjba to Lagos.

—Mr. Leigh Smith (see the February Notes) starts this spring on his third voyage of discovery in the Spitzbergen seas, in the fine steamer *Diana*. His first, in 1871, was the most remarkable voyage in those waters since 1707, as he discovered a large extent of coastline north and east of North-East Land, attaining the highest latitude ever reached by a ship except those of Scoresby and the Swedes. In 1872 the ice was unfavorable, but Mr. Smith made some important observations of sea-temperature. He now aims to explore the unknown lands to the east of Spitzbergen.

Photography.—We have known the pupils in a classical school to be so thoroughly drilled in the topography of ancient Rome and Athens that, fresh from this study, they could have visited the modern cities with a perfect familiarity with their principal streets and monuments. Of course this was effected by means of a plan drawn on a large scale, in which superfluous details were omitted. There is no reason why the topography and characteristic features of any American city should not be learned in the same way; and there are at least half a dozen which would be worth studying. We have selected Baltimore as our example, calling to our aid Appleton's Handbook of Southern Travel, which gives a plan of the city, and the photographic views of W. M. Chase in the stock of Messrs. E. & H. T. Anthony, 591 Broadway.

(a) General views. None of these are quite satisfactory as showing the picturesque unevenness of this beautiful city, built upon a hill. Referring to our imaginary map, we see that Baltimore lies on the bay-like expansion of Patapsco River, whose two arms inclose a small peninsula, on the neck of which Federal Hill, and at the lower end Fort McHenry, are situated—two names made famous in the

early days of our civil war. Opposite the base of Federal Hill empties Jones's Falls, a small southward-flowing stream, dividing the city into east and west about equally, though it does not mark the corresponding street divisions. The south-western limit of Baltimore is approximately fixed by Gwinn's Falls. The general arrangement of the streets, except in the older portions, is rectangular and conformable to the four points of the compass. No. 224 is a quiet view of Jones's Falls, from the Baltimore street bridge—looking south, as we judge. No. 360 shows a charming hillside in the valley of Gwinn's Falls. Of Federal Hill and the Basin at its feet we have two views full of life and interest, Nos. 560 and 1384: boats of all descriptions on the water and at the wharves, and a human throng witnessing some great event. Three views of Fort McHenry, from the point of land opposite, Nos. 308, 309, 310, differ from each other chiefly in the craft sailing by. No. 306 is a view from the Fort looking down the Patapsco; No. 304 looks the other way, and gives a good distant view of the city, with the outline of the range behind it to the north. The rear of the Fort and the Northwest Branch are well exhibited in the companion views Nos. 134 and 206, taken from Federal Hill; they include also the shipping and the ship-yards. To the same advantage we owe the general view of the city across the Basin, No. 129, in which the Washington Monument and several of the principal churches are conspicuous. "Baltimore, by Moonlight" (more truthfully, on a cloudy day), No. 193, is a nearer view of the church edifices, with some interesting house-tops and back yards, from a high point westward; and they are brought one step nearer in No. 18, taken from the top of the Washington Monument (looking south), in which the Catholic Cathedral is most prominent. The Monument itself is best seen in No. 5—a Doric shaft faced with marble, the statue being more than 300 feet above tide-water. Battle Monument, a well proportioned mass and graceful Italian design, appears in No. 21 (?), with the inscription plain to be read commemorating the battle of North Point; and, more distantly, in No. 189, looking up Calvert street, from the corner of Baltimore. The Wilkey Monument, in honor of the founder of the American Order of Odd Fellows, consists of a Doric shaft with medallioned base and a preposterous cap surmounted by an allegorical group (No. 52).

(b) Coming down now into the city, we have numerous views of the main business thoroughfare, Baltimore street, from which we select Nos. 223, 229, looking west; Nos. 181, 226, 230, looking east; No. 222, from the bridge—which together give a good idea of the old and new portions, the travel and the traffic. Of the north-and-south streets we can recommend No. 201, Charles street, the favorite resort for "shoppers," and a pleasant drive-way to Druid Park past the Washington Monument. Two views of Broadway are pleasant also, one looking south to the North-west Branch; the other north, with

a parade of Zouaves and crowded sidewalks—time 2 P.M., by the church clock yonder (Nos. 55 and 218). North Eutaw street (No. —) is a comparatively featureless view, but what city is without many such? In No. 33 we have the lofty and picturesque Shot-tower, higher than Bunker Hill Monument. Where wealth, fashion, and culture live may be seen in Nos. 7, 8, and 70, all views of Mt. Vernon Place. "Lexington Market, of a misty morning," lets us in to one of the most characteristic scenes of Baltimore. Spear's Wharf, No. 1385, may be taken as a specimen of its class. Public buildings we must hurriedly enumerate: 6, Peabody Institute; 39, Masonic Temple; 30, Court House, near Battle Monument; 68, U. S. Court House; 177, Custom House; 35, City Jail; 61, Bay View (Alms House). The *Sun* building, No. 79, is said to be the first iron structure ever made in the U. S., and it is no uglier than the latest; and another warning example in architecture is Ford's Grand Opera House, with its boxes of Mansard pattern on the roof. Interesting in all ways, and especially in contrast with these last, is the first hotel in Baltimore, Washington's headquarters (No. 71).

(c) A brief glance at the suburbs: No. 247, Mt. Royal Reservoir, Nos. 242, 1375, 1377, show the entrance portico of Druid Park in front and rear, and Swan Avenue, lined with flowering vases; No. 284 gives a fine country view from the Park, No. 286 a pleasant view of sheep on a grassy slope within; No. 298 is the least feeble work of art in the Park—a statue of Summer. The gateway to Greenmount Cemetery is depicted in No. 81, and, in No. 114, the monumental statue to McDonough, with an ill-conceived pedestal. A bronze dog, No. 745, apparently before a private dwelling, is perhaps as good art as any we have thus far found.

EDUCATIONAL INTELLIGENCE.

NEW YORK STATE TEACHERS' ASSOCIATION.

THE twenty-eighth anniversary of this Association will be held at Utica, commencing Tuesday, July 22d, 1873, at 2.30 P. M., and will continue three days. The preliminary arrangements of the executive committee are sufficiently matured to enable us to give the following general outline of the proceedings:

There will be two general meetings of the Association each day—Tuesday afternoon and evening, and Wednesday and Thursday morning and evening. The morning sessions

will continue from 9 A. M., to 1 or 1.30 P. M., and the evening sessions from 7.30 to 9.30 P. M. Papers upon the various subjects of practical importance will be presented, and ample time for discussion will be allowed. No place will be provided for entertainments of simply an amusing character.

The afternoon of each day will be devoted to meetings by sections, representing the different departments of educational work, thus affording for each the opportunity of free and full discussion. They are expected to organize on Tuesday at 4 P. M., or immediately after the close of the first general session, by the election of chairman, secretary, etc. In order that there may be no delay or embarrassment, a committee for each of the following departments will be appointed in advance, to secure the preparation of papers on subjects pertinent for consideration and discussion: 1. Common schools, including elementary and union. 2. Supervision—(a) cities; (b) rural districts. 3. Professional training of teachers—normal schools and institutes. 4. Higher education—academies, high schools, and colleges. It is expected that each section will make a report to the general meeting of such matters as shall be deemed important.

The invitation to meet at Utica was most cordial, and no effort will be spared by City Supt. McMillan and others of the local committee in providing all needful facilities for the care and convenience of the Association. Many of the most distinguished educators and eminent men, Gov. Dix among the number, of our own and other States have signified their intention to be present.

On Friday there will be an excursion to Trenton Falls, a short distance north of Utica, on the Black River railroad. Prof. Hall, State Geologist, Prof. Peck, Botanist, and Prof. Lintner, Entomologist of the State museum, will accompany the excursion, and at lunch-time a field meeting will be held when they will explain the natural history of that locality.

The officers of the Association are Edward Danforth, President, State Hall, Albany; Prof. Henry R. Sanford, Recording Secretary, Fredonia; Prof. O. B. Bruce, Assistant Rec. Secretary, Binghamton; Dr. James Cruikshank, Corresponding Secretary, 206 So. Oxford St., Brooklyn; Prof. Daniel J. Pratt, Treasurer, State Library, Albany.

GEORGIA.—ATLANTA.—There are at present nine public schools, namely, two high schools, five grammar schools for white children, and two grammar schools for colored children.

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| Number enrolled in white schools..... | 2,075 |
| Number enrolled in colored schools..... | 767 |
| Total in all the schools..... | 2,842 |

These schools are all graded, so that scholars of the same degree of advancement are placed in the same class; the buildings are all suitable, (three of the houses are new,) and provided with convenient furniture; the scholars are equally apportioned to the teachers, and the teachers assigned to places where their abilities will render their services most profitable; a graduated and systematic course of study is prescribed, and scholars are promoted from one grade to another on test examinations; and, finally, the schools are under the supervision of a Board of Education appointed by the City Council.

MACON.—The Principal of the Board of Trustees of the Academy for the Blind reports thirty-nine pupils enrolled since Jan. 1st, 1872. The expenses of the last year have been \$10,775.83. The institution enters upon the new year with a balance in its favor of \$1,254.69.

ILLINOIS.—There are in the State three hundred and eighty-five more public schools than there were two years ago, and, by the reports of county superintendents, 9,334 more pupils in the schools. The increase in the number of scholars is, in fact, considerably greater than the above, probably 10,000 or 15,000 more. For some unknown reason, no reports of attendance were furnished, for 1872, from one of the largest cities in the State outside of Chicago, and from three or four large villages. The actual increase of pupils in the two years is about 25,000. The figures show a decrease of 9,741 in the average daily attendance in 1872, as compared with 1870. This also, for the reasons just given, is in part apparent only, not real. The missing reports would considerably increase the exhibit of daily attendance, and possibly show a small increase over that of

1870 and 1871. Is it not a very grave fact that of the 882,693 persons of lawful school age, only 662,049 were in the schools at all, in 1872; and that less than one-half, even of that number, were in daily attendance? It is noteworthy that the number of private schools is shown by the reports to have decreased ninety-four, and the number of pupils in such schools, 6,217, during the last two years. The whole number of private-school scholars reported in 1872 is 34,784, an element of inconsiderable importance in the matter of absenteeism just referred to, when the entire school census of the State is taken into view. The number of districts sustaining schools for the full legal term of six months, is five hundred and eighty-eight greater than in 1870, while the number failing to have any school at all, is eighty-seven less than it was two years ago. The increase in the number of teachers has been: ladies, five hundred and ten; gentlemen, three hundred and thirty-three—total, eight hundred and forty-three. There has also been a slight increase in the average monthly wages paid.

INDIANA.—TERRE HAUTE.—Whole number of pupils enrolled, 3,198. Average daily attendance, 2,075. The school property was left in good condition at the close of the year. Both teachers and pupils were enthusiastically in favor of keeping everything in repair; and, in many instances, interested themselves in ornamenting the school rooms with plants and pictures. This kind of work is to be highly commended, since it has a tendency to secure better attendance at school, by making the school-room pleasant and attractive; to aid in discipline, by directing the minds of the children to the contemplation of the beautiful in nature and art; and to make instruction more profitable, by imparting the same under the most favorable circumstances.

SEYMOUR CITY.—Total number of pupils enrolled, 875: of whom 608 attend the public schools, and 70 attend Catholic institutions.

NEVADA.—Number of children between the ages of six and eighteen years (in 1872), 4,409. Total number attending public schools, 2,505. Attending private schools, 354.

Not attending any school, 1,225. Total expenditure for the year, \$98,468.82.

NEW YORK.—NEW YORK CITY.—The average attendance of pupils for the year ending Sept. 30, '72, was 106,326; and the whole number of pupils who received instruction during any portion of the year, is reported as 235,880. There is accommodation for 11,641 more pupils.

The whole number of pupils enrolled during any part of the term, in the evening schools, was 12,651 males and 6,129 females; the average attendance for the term was 4,980 males and 3,436 females; while the largest average attendance for any single week was 7,857 males and 4,369 females. This is exclusive of the evening high school and the colored schools. The average attendance of the latter was 122; the whole number enrolled, 449.

SCHENECTADY.—Number of pupils registered, 1,907. Average daily attendance, 1,260. Total receipts, \$17,591.26. Total expenditures, \$18,260.77.

OHIO.—The forty-third annual report of the common schools of Cincinnati, for the year ending June 30th, 1872, gives a full account of the condition of public instruction in that city. Two new school-houses have been contracted for at a total cost of \$120,100. Money received during the year, \$766,601.71; expended, \$746,027.03. The library has received an addition of 15,678 books, making a total of 50,000 vols. The whole number of pupils registered is 26,449. The decrease in attendance, in comparison with the previous year, which has been 845, is accounted for by the prevalence of the smallpox during the entire scholastic year. A department for training German teachers has been added to the normal school. In speaking of this important branch of our educational system, the President remarks: "It is not within the province of the normal school to *teach any branch of study*. This should be attended to in our high schools. It is much easier for most persons to learn *what* to teach than *how* to teach; and it is the peculiar office of the normal school to instruct its members in the best methods of presenting the studies to be taught, and of preparing the young and tender mind for the reception of those primary principles and

wholesome truths which form the sure basis of a permanent structure."

WE are indebted to the Circular of Information of the Bureau of Education, for February, 1872, for the following interesting educational news :

ARGENTINE REPUBLIC.—Señor Avellaneda, Minister of Public Instruction, says in his report to Congress, 1871 : " The task we have to accomplish is great, for there are now, according to the statistics contained in my last report, three hundred and fifty thousand children growing up in ignorance, and who, in time to come, will be men with all the gross tendencies ignorance engenders. But as we are sincere and open in presenting the existing evils in all their nakedness, we must, in order to be just, grant that better days are approaching ; for the schools increase, the number of scholars is greater every year, new and better buildings are erected, and laws are enacted tending to diffuse general knowledge ; public opinion demands them, receives them, and begins to convert them into fruitful actions."

The normal school of Paraná has two divisions, a " normal course" and a " school of application." In the studies of the latter section " morals and politeness" have a prominent place. There is a national college in each province except in Santa Fé. The nation thus maintains one university, and thirteen colleges, which are under the authority of the minister, and which educate 2,385 young men—an increase of 501 over the number of students in 1869.

CHILI.—Of the school-houses 165 are public property, 337 are erected by the government, 20 by the townspeople, 70 given by, and 40 belonging to, convents and monasteries ; making a total of 672 school-houses. Total number of pupils attending public schools, 38,904. Total expenditure, 370,129 pesos (\$362,726.42). Average cost of the education of each pupil, 9.51 pesos (\$9.32). Extract from the report of Señor E. Altomirano, Minister of Public Instruction.

ECUDOR.—A law passed by Congress, Nov. 2d, 1871, provides for gratuitous primary instruction in the public schools, and makes it obligatory for all boys and girls be-

tween the ages of six and twelve years. After Jan. 1st, 1882, a personal tax, equivalent to ten days of labor, will be levied on all males aged twenty-one who shall be unable to read and write. This class will be conscripted into the army in preference to all others.

GREECE.—From the report of Hon. John M. Francis to Hon. Hamilton Fish, we make the following extracts :

Number of pupils in attendance at the University and at the public schools, 73,219. Number at other schools, 7,978. Total, 81,197. This is a percentage of 1 to 17 $\frac{2}{3}$ of the population of the kingdom.

“ But an analysis of the statistics shows that of this number (81,197) attending the schools, 65,111 are males, and 16,086 are females. It is evident that female education is sadly neglected in Greece.

“ The criticism may also be made that the government policy begins at the wrong end in its support of educational interests. The largest support is given to the university, which is free to all pupils. It educates students chiefly for the professions. Of the 1,244 now in attendance, it will be seen that 622 are named as law students, and 423 as students of medicine. The result of this system of education is the over-crowding of the professions. The university turns out lawyers and doctors in sufficient numbers for a country of more than ten times the population of this kingdom. Their field for employment is, for the most part, confined to Greece and that portion of Turkey where the Greek language is spoken. Many of them, unable to obtain employment in their professions, grow up in idleness, too proud to engage in productive pursuits, and struggling for subsistence by other means than manual labor. Numbers take up politics and endeavor to obtain employment in the public service. These embrace a large proportion of the office-seeking class, and constitute an element of mischief in political agitation by clamoring for frequent ministerial changes in the hope of securing subordinate official positions.”

ITALY.—Technical studies have rapidly risen to great importance, and are constantly increasing under the new order of things.

A few figures will prove this better than any words. In 1860 the number of technical schools was four, and these were unsatisfactory in the highest degree; while the number of these schools in 1869 was seventy-eight, most of them well appointed and well managed.

These schools are most numerous in Lombardy (12) and Piedmont (11.) Liguria and Emilia have each 6, Sicily 7, Venetia 6, etc.

PORTUGAL.—On the 31st of December, 1869, three were on the continent and the adjacent islands 1,997 schools for boys, and 362 for girls.

During the year 1868-69 there were in operation 1,810 boys' schools, attended by 99,385 scholars, and 284 girls' schools, attended by 17,947 scholars.

At the end of the year 1869, 6,001 boys had finished their education, and 654 girls.

JAPAN.—Yedo has 756 schools of all kinds, with an attendance of 40,568 pupils.

CURRENT PUBLICATIONS.

THE question whether the study of American Literature should precede that of English [British] in our schools, is one on which, if forced to express an opinion, we should have to take issue with Mr. Royse.⁽¹⁾ That it is eminently worthy of attention, all will admit; that it must needs be considered apart from "English" literature, is not so clear. We do not speak of the "American Language," though there was once, we believe, an "American Dictionary;" nor would it be as easy as it may seem, to draw a line that should exactly divide the cisatlantic and transatlantic sections of English literature. Shall we count Sandys as an American writer, because he chanced to translate the *Metamorphoses* on the banks of the James? or shall we surren-

(1) A MANUAL OF AMERICAN LITERATURE, designed for the use of Schools of Advanced Grades. By N. K. Royse. Philadelphia: Cowperthwait & Co. 1872.

der to England whatever Howells or Irving or Motley may see fit to compose abroad? We do, indeed, study American history before English, and for reasons too plain to require naming; but when it is claimed that American literature should precede English "for equally good reasons," we demur. Certainly the reasons are not the same in the two cases. American literature is but a branch, a continuation, of English. We are inheritors, equally with our British cousins, of the accumulated treasures of English thought. Shakspeare and Milton are as much ours as theirs. And the English vulgate of the Bible, King James's version, —who is disposed to set that in the second place, and give Noyes, or Sawyer, or even Noah Webster's revision, the precedence? One of the best features of Mr. Gilman's little book, to our mind, is his inclusion of British and American authors in one scheme. The commonwealth of letters is not crossed by mere political lines. If it were, then Jeremy Taylor and Dean Swift should be assigned to Irish literature, and Jeffrey and Wilson to Scottish.

This is not said from a fear that excessive attention will be paid to "American" literature, but because we see no sufficient reason for a divorce between the two. The present volume is, on the whole, the best suited to the wants of our schools, of all with like design that we have thus far examined. The authors are well chosen, and the selections made are both valuable and characteristic. These extracts constitute the chief value of the book. This is said without disparagement of the critical opinions, which are, in the main, intelligent and just. If these literary judgments were original, instead of being borrowed, as for the most part for they are, the work would perhaps have an interest for the student of literature which it does not now possess. We have tested some of the extracts by the latest editions of the authors from whom they are taken, and find them to be carefully reproduced; though Bryant's spelling is Websterized, and, in a few instances, both punctuation and language differ from those of the author's last revision. The Introduction, or "General View," is rapid and brief, giving but the barest outline of our literary history. It is a skeleton, that needs more flesh upon it, to produce the impression of life.

The book is not wholly free from errors. "Sophie May" and "Mrs. Madeline Leslie" are given as real names; a bad spell is cast on Longfellow's Kavanaugh; his translation of Dante is said to "answer word for word to the original,"—certainly a marvellous feat of *rendition*, to use one of our author's words. We wonder what Bentley would say to "the real poetic and *Homeric intensity peculiar* to Pope's translation" of the Iliad; and we are utterly at a loss to know what is meant by the "varied metres of Hiawatha." Our copy of that much lauded poem presents it in pretty monotonous trochaic tetrameters. It is a little singular that, in the sketch of Bancroft's political career, there should be no mention of his present honorable service abroad. Mere errors of the press are rare, and we pardon them.

We always look, in a work on Rhetoric or Literature, to find in the style a model which may safely be imitated. Mr. Royse's pen, while generally correct in its use of English, is evidently not a practiced one. Some of his compounds strike one queerly; *author-master*, *farm-home*, *deist-reposing* [devotion]. His use and application of single words too, is not wholly unexceptionable: *e. g.*, *enthuse*; *eventuated*; *either* [of three]; *Orthodoxy* [meaning "orthodox clergy"]; "extraordinary occasions for oratory have *obtained*" [meaning *occurred*]; *most unique*; "clearness, polish, etc. denote [characterize] his style;" and for which [double connective]; "*Briarean-handed* career;" *locating* [settling]; "the tales of Irving are the favorite *authors* of childhood;" "*combustible* and ample *fuel*;" "indigenous and *intrinse* flowering of poetic genius;" "variously *themed* and *rhythmical* poems."

Some phrases and sentences are worthy of citation. Of Saxe, it is said that "his satire bites on the grin;" also that he "finds his truest *employ* in poems," etc. But what is meant by "*itinerant* schools of the day" [1790], we do not know; though we could see the appropriateness of the term, if applied to school teachers, even now. Dr. Holmes's pen is represented as "*tracing itself*, now in prose, and now in verse, *both* grave and gay, or tender and caustic"—as verse could be at once both tender and caustic, to say

nothing of other peculiarities in the two lines. "Channing's address on Self-Culture occupies in American literature *what* Milton's *Areopagitica* occupies in English literature." Lowell is said to have been "helped into the chair *just being vacated* by Longfellow"—a rather unseemly way of ousting his predecessor. That the Vatican contains both statues and pictures is known to most people, but it would occur to few writers to imply the fact by the phrase, "*statuesque* and *picturesque* Vatican." One more sentence, and we have done: "Surely no American writer, if indeed English *either*, has flourished, concerning whose works there exists such a *latitude* [variety, diversity?] of opinion among critics, as *there does* concerning Emerson's".

We would not like to have ingenuous youth imitate the crudities of which we have given specimens. We can commend the plan of the book, its selections, and much of the criticism; but the *original* portion of it needs "editing."

THE "Elocutionists' Annual" (J. W. DAUGHADAY & CO.) contains many choice selections, principally poetical. The few prose extracts are generally well chosen, but there is entirely too much trash in the book. The Old Yankee Farmer, Women's Rights, and My Mule, are well enough in their way, but they do not belong in a book of this character. Mrs. M. E. Allen has over six pages of what is named "Song Revels," the titles of ballads strung together, by all odds the most wretched piece of the collection. If all the selections of the character of those mentioned above were taken out, there would still be enough left to make a good book. The paper cover may be an objection to some, but the neatness of the mechanical execution and the cheapness of the volume must recommend it.

RECEIVED from CHARLES C. CHATFIELD & CO., "The Earth a Great Magnet," "Mysteries of the Voice and Ear," and "The Yale Naught-ical Almanac."

"Cheerful Voices" (OLIVER DITSON & CO.) contains a good collection of songs suitable for the opening and closing exercises of schools. The words and music are well adapted to each other.

RECEIVED from HENRY HOYT, "The Man with the Book."

BOYHOOD.

Words by DR. W. J. WETMORE.

Music by U. C. BURMAN, Mus. Doc.

With Spirit.

I. Hur-rah! boys, hur-rah! the mer-ry bells are ring-ing,
Hur-rah! boys, hur-rah! we'll nev-er dream of sigh-ing,

The first system of the musical score for 'Boyhood'. It features a vocal melody on a single staff and a piano accompaniment on two staves. The key signature has one sharp (F#), and the time signature is common time (C). The lyrics are written below the vocal staff.

This is the time for hap-pi-ness and joy; Round us the
Why should we care while joy is on the wing? What though old

The second system of the musical score. It continues the vocal melody and piano accompaniment. The lyrics are written below the vocal staff.

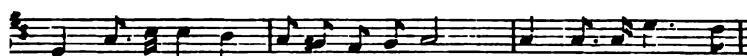
flowers of youth are brightly spring-ing,— Who would not be a
Time is on-ward swifter fly-ing, We'll laugh at fate, and

The third system of the musical score. It continues the vocal melody and piano accompaniment. The lyrics are written below the vocal staff.

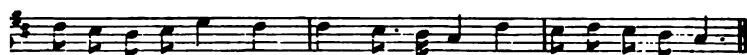
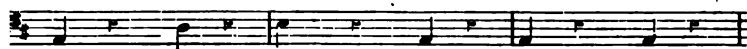
mer-ry, laughing boy? Friends clus-ter round us, ne'er of sor-row dreaming,
mer-ri-ly we'll sing: Let us then join in cheerful ring-ing cho-rus,

The fourth system of the musical score. It continues the vocal melody and piano accompaniment. The lyrics are written below the vocal staff.

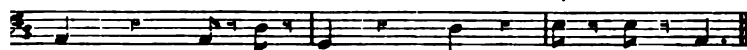
BOYHOOD.



Ev - ery fond heart grows fond-er, dear-er still; Hearts beat with glad - ness,
And ev - ery voice in con-cert glad u - nite: Life, with its pleas - ures,



eyes are brightly beam - ing, Boy - hood will laugh at ev - ery passing ill.
now is all be - fore us, Hope 'round us shines in col - ors fair and bright.



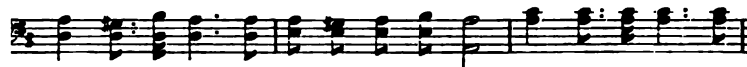
Chorus.



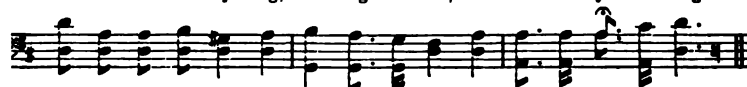
Hur - rah! boys, hur - rah! the mer - ry bells are ring - ing,
Hur - rah! boys, hur - rah! we'll nev - er dream of sigh - ing,



This is the time for hap - pi - ness and joy: 'Round us the flowers of
Why should we care while joy is on the wing? What though old Time is



youth are brightly springing,—Who would not be a mer - ry, laugh-ing boy?
on - ward swift-er fly - ing, We'll laugh at fate, and mer - ri - ly we'll sing.





THE SCHOOL COMMISSIONER'S VISIT.—A DIFFERENCE.

COMMISS'ER.—"Now, my young friends, suppose twelve men buy twenty-four bushels of wheat to be divided equally among them, how many bushels is that for each?"
 BOLDEST OF THE JOCKEYS.—"I've not gone that far."
 COMMISS'ER.—"How is that? Your teacher told me you had learned all the first four rules!"
 BOLDEST OF THE JOCKEYS.—"I have done our rule in potatoes or turnips—we have never had wheat."

AMERICAN EDUCATIONAL MONTHLY.

MAY, 1873.

POPULAR ERRORS AS TO THE SUN'S TIME AND PLACE.

DOES not the Sun always rise in the East and set in the West? No.

Is it not always 12 o'clock, when the Sun is on the 12 o'clock mark? No.

Does not the Sun keep, and has he not always kept, more regular time than any time-piece made by human hands? No; the sun is *regularly irregular*.

To many persons the above answers will cause surprise. They have never questioned these facts so boldly denied, nor have they ever known them questioned. To their minds, these have been certainties, if there are certainties in nature, and the denial now strikes them as a sort of semi-infidelity. Nevertheless the answers given above are correct, practically, as well as astronomically, and are worthy of being more thoroughly understood by all. Let us look at each question in turn.

Question First, as to the Place of the Sun's Rising and Setting.

On the 21st day of March and the 22d of September, the times of the equinoxes, there are two occurrences to be observed which mark no other seasons of the year,—the days and nights are of equal length over all the earth, and

the places of the sun's rising and setting are exactly east and west. If any one wishes to determine the exact point east from his door, let him, on the morning of either of the equinoxes, note, on the distant horizon, the tree-top, or house or mountain crag, over which the centre of the sun's disc passes in rising. Nor will any difference be made in the result if, by reason of the observer's place being in a valley, or on a ridge, that distant crag or tree top should be far above or far below the astronomical horizon; for the sun's centre will be upon the east and west lines through the *whole of the revolution* that day and that night.

But let the observer wait for a week or two, then make another observation, and he will find that the sun no longer rises and sets where it did before. After the equinox of March, it will have gradually traveled north, until the 21st of June, when its place of rising and of setting will be many degrees north of east as will equal the sum of twenty-three and a half degrees added to the observer's degree latitude.* Near the arctic circle where, on the 21st of June, the sun disappears but a moment behind the horizon and when, on the 21st of December, it appears for only a moment above it, these momentary risings and settings are always *due south*.

The answer to question first must therefore be that the sun rises and sets exactly in the east and west only twice every year, and that at the time of the equinoxes.

Question Second, as to whether it is not always 12 o'clock when the sun is on the 12 o'clock mark, can only be elucidated by facts belonging more appropriately to question third. In the mean time, a practical answer may be given by referring to a column to be found in many almanacs, in some marked "*Equation of Time*," in others marked "*Sun fast*" and "*Sun slow*," which means that the *sun's twelve o'clock* is faster or slower than the *clock's twelve o'clock*, by the number of minutes there given. The variation thus noted

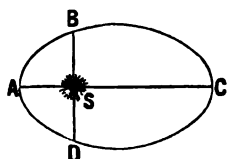
* Ere the ink of this sentence is dry, nature has furnished an illustration, exceedingly beautiful, the fact that in midwinter in latitude 34°, the sun sets far to the south of west. This is the 2d day of January. The sun is just setting. A heavy shower has blown over, and the whole northeastern heaven is spanned by one of the most brilliant and perfect of rainbows. Its southern foot now stands a few degrees south of east, while its northern foot has barely disappeared from the horizon a few degrees east of north. This proves the sun's position at setting to be nearly southwest.

amounts at two seasons of the year to as much as sixteen or seventeen minutes, though usually it is less. There are only four periods of the year,—the middle of April and June, and the last of September and December,—when the sun's time and clock-time coincides.

Question Third, which asks if the Sun is not more regular than any human time-piece, will require a somewhat more elaborate answer. In one sense the sun is incomparably more exact than any piece of earthly mechanism (or rather *the earth is*, for the motions usually referred to the sun are properly referable to our own globe), but in another sense it is far from being as exact as any approved chronometer. To explain: The earth has two motions radically distinct, both of which are measured by the clock. One of these motions is that revolution upon its own axis which gives us the experience of day and night. If this motion be measured by *star-time*, it will be found to be at all times perfectly the same. That is if a man take any fixed object, the edge of a distant wall for instance, behind which a certain star—a *fixed star*—shall pass, and have a certain fixed place for resting his head, he will find by means of a perfect chronometer that the star selected for observation will pass that point every night exactly 23 hours, 56 minutes, 4 seconds and 9 hundredths of a second after its preceding passage. This is *star-time*, but it is about four minutes short of clock-time; and why? For this reason, that the earth by its revolution round the sun, in the same direction with its diurnal revolution has *one more rotation* upon its axis, to make during the year, than is counted when the days are counted by the risings and settings of the sun, just as a vessel, sailing westward around the earth, *gains a day*, without its being noticed, till the vessel returns to port. Now this day, gained during the year, if resolved into minutes, and divided by 365, will give the four minutes difference between solar and sidereal time. But whoever will take that same place, chronometer in hand, and mark the minute and second when the *sun's centre* passes the point selected, will find no such regularity. In fact the days, measured by the sun, are not all of the same length; a day about Christmas time is about a *minute longer* than a day at

the September equinox, one being about 24 hours and 30 seconds, and the other 23 hours, 59 minutes and 30 seconds. Why so? The answer to this question renders it necessary that we shall bring in another element, the earth's revolution round the sun,—that other motion alluded to.

Were the earth's path around the sun a circle, in which the earth moves with uniform velocity, then the length of all the days would be exactly the same, *i. e.* 24 hours, and then sun-time and clock-time would always be together, and both be about four minutes (additional every day) ahead of star-time. But the earth's path is not a circle, it is an ellipse, and the sun is not in the centre



of it, but on one of its foci, see Fig: in which A, B, C, D represents the earth's orbit around the sun S; and in which the points B and D represent the equinoxes, and A and C represent the solstices. Since a whole

day is gained in the course of the whole revolution A, B, C, D, it is manifest that one-fourth of a day must be gained in each one of the *unequal quarters* (as they may be called) A B, B C, C D and D A. Now, supposing the speed of the earth is the same in all parts of its orbit, it is manifest that the *short quarters* D A and A B, in each of which six hours (quarter of a day) are gained, will be accomplished in less time than the long quarters B C and C D, in each of which also six hours only will be gained, which is equivalent to saying that the days in the perihelion part of the earth's orbit, D A B, are longer than those in the aphelion portion of it B C D, for the reason that the twelve hours of time gained is divided among a smaller number of days in the one case than in the other.

But the *speed of the earth is not the same in all parts of its orbit*. It is greater at the perihelion point A, than it is in the aphelion point C, for the reason that from the point C the earth is virtually *falling towards* the sun, until it reaches its nearest point A; and from the point A it is virtually *projected from* the sun until it reaches its farthest point C. In both its ascent and descent it must obey the same laws

as a stone falling to the earth, after being projected from it; its motion is constantly accelerated in the one case, and retarded in the other. From the point C, the earth would fall *to* the sun, were it not for its projectile motion, which carries it to one side as far as D, and thus causes it to *shoot past*, in the curve D A B, and begin again its departure on the other side of the ellipse A B C. With these facts in mind, it is manifest that not only is the perihelion *half*, so called, D A B, of the earth's orbit, shorter in distance, but it is passed over with greater speed. The difference in time between these, so called, "halves," may be calculated by any one who will count the number of days included in the perihelion half, from Sept. 22d to March 21st, and the number included in the aphelion half, from March 21st to Sept. 22d,—in the first named of these they are $181\frac{1}{4}$, in the other they are 184, being a difference of two and three-fourth days.

Keeping now in view these two causes of variation from equable time,—viz., that the winter "half" of the earth's orbit is considerably shorter than the summer "half," and also that it is passed over with a decidedly greater velocity, we may see how it is that the sun's time is more exact yet far less exact than that kept by man-made chronometers. It is *perfectly exact*—which cannot be said of any human time-piece—when you compare any one *whole* revolution with another, or any one point of a revolution with the same point in any other revolution,—for each year, counting from whatsoever point you will, measures, in *sidercal* time, 365 days, 6 hours, 9 minutes, 9 seconds and six-tenths of a second, and in *equinoctial* time—which includes an element we have had no occasion to consider—365 days, 5 hours, 48 minutes, 49 seconds, and seven-tenths of a second. But it is *never exact* when you compare any two days of the 365 with any other two days of the same period. Indeed *no two days together*, throughout the year, are exactly of the same length, except by a rare accident at the points of greatest or least excess. There is a ceaseless waxing and waning of apparent time. A chronometer, on the contrary, is constructed on the principle of keeping *equable time*, and of dividing each year into 365 exactly equal parts. The

continual increment of the sun's apparent motion at one part of the year and decrement at another, cause that departure from equable time which call for the columns in the almanacs marked "sun fast" or "sun slow," and which show a variation amounting sometimes to more than a quarter of an hour.

REV. F. R. GOULDING.



THE STRUCTURE OF THE APPALACHIAN ZONE.

PART FIRST.

IF one examines the map of our country he will find stretching from the St. Lawrence at the north-east to central Georgia and Alabama, at the south-west, a series of rudely parallel mountain ridges, each made up of disjointed parts, of varying height and throwing off spurs in every direction. This series forms the eastern rim of the cup, called North America, and is known as the Appalachian Zone.

It rises somewhat abruptly near the St. Lawrence River in a belt of broad low mountains, and running south-westwardly, attains its greatest width in central Pennsylvania and northern Virginia, whence it narrows to central Alabama, where the several ridges fade away beyond recognition. The whole length is nearly fifteen hundred miles, so that to the Indian it was indeed the "endless mountain." In height the mountains of this chain are not imposing, seldom reaching more than four thousand feet above the sea-level, while ordinarily the hills rise only from eight hundred to two thousand feet above the adjoining valleys. Unlike the Rocky Mountains and the Sierra Nevada the Appalachians deserve the title of mountains, not so much because of their altitude as because of their immense mass.

The ridges of this zone appear to form three well-marked divisions. The first is the greatest in length and begins at the extreme north-east, near the St. Lawrence River. In Vermont it is known as the Green Mountains, in our State as the Highlands-on-the-Hudson: in Pennsylvania as the

South Mountains, in Virginia as the Blue Ridge, and in the Carolinas as the Unaka or Smoky Mountains. The White Mountains of New Hampshire may be regarded as belonging to this division. In Pennsylvania the continuity is entirely broken so that the South Mountains consist of two separate ranges, the northerly one being an extension of our Highlands and reaching to the Schuylkill at Reading, and the other reaching from the Susquehanna southwardly until it is merged in the Blue Ridge. The rocks of all these ranges are for the most part those of the oldest, and are chiefly massive granites or gneissoid and slaty rocks. In height the mountains of this division are variable, ranging from six hundred feet in Pennsylvania to six thousand in the Southern States, but everywhere they are so abrupt and harsh in their outlines, that even the hills, only six hundred feet high, are well called mountains. In width this belt varies from five to twenty miles. A good conception of its general character in the southern extension can be acquired at Harper's Ferry, where breaking through the Blue Ridge the Potomac River exhibits one of the most picturesque scenes in our country. In Pennsylvania, however, the scene is tame and monotonous.

Adjoining this division on the north-west is that remarkable valley extending from Vermont to Alabama, and termed by the Professors Rogers "The Great Appalachian Valley." In Vermont and New York this is known as the Valley of Lake Champlain and the Hudson River, or, as some have called it, the Valley of Newburgh. In Pennsylvania it is the Kittatinny or Cumberland, while in Virginia and beyond it is the Great Valley of Virginia and Tennessee. In width it varies from ten to twenty miles, and, except in its extreme northern extension and in lower Virginia, it is unbroken by spurs or ranges, but presents a broad fertile valley, bounded on both sides by somewhat abrupt mountains, whose foothills have a very gradual slope. Its elevation increases to the south-west, for on the Hudson River it is washed by tidewater; at Easton, Pennsylvania, it is one hundred and sixty feet above the sea-level, while in south-western Virginia its altitude is two thousand feet. This beautiful valley is interesting alike to the artist and the

economist. The Kittatinny Valley, viewed from the Jenny Jump, in New Jersey, a spur of the South Mountain, or from Neversink Mountain, near Reading, affords a scene of quiet beauty rarely excelled. For the most part the soil is of unsurpassed excellence, the streams are rivers, and underlying all are vast treasures of mineral wealth. Remarkably free from malarial influences, with climate and soil well adapted to agriculture, and lying midway between the coal region at the west and the Atlantic border at the east, the prosperity of this valley is almost without parallel in our country.

North-west of this valley we find the second mountain division, made up of many low parallel ridges, usually very straight and often of considerable length. Though presenting no Alpine forms, no needle-like peaks, no jagged crest line, towering above perpetual snow, cleft by deep valleys, and giving rise to enormous glaciers, grooving and polishing the surface over which they pass, this strangely complicated division is as attractive as though it possessed all these features of the Alps. "Nowhere else on the known earth is its counterpart for the richness and definiteness of geographical detail. It is the very home of the picturesque in science as in scenery." Here was found the key by which American geologists were enabled to explain to Europe the structure of the Jura. As Lesley says, "Years of patient toil it cost us to unfold the mysteries of the Pennsylvanian and Virginian range—a tangled hank, to be untangled thread by thread, and re-arranged skein by skein—a tracery more elaborate and intricate than Gothic or Arabesque—nature's primeval labyrinth, in which the minotaur was but a form of science cast in metal and sculptured in stone: a sphynx whose riddle has at length been read and written out by men like Henderson and Whelpley, in what are now to be forever the hieroglyphics of geology."

These ridges have sharp summits and steeply sloping sides, to be likened only to the steep roofs formerly in vogue in our cities. For fifty miles the crest of the ridge shows an unbroken level, save where some stream, running continuously down the mountain side, has cut out a cañon, or where, during the throes amid which the mountain was

born, the strata were rent from top to bottom, opening a cleft which, enlarged by the ceaseless wear of a river for almost countless years, now appears as a dark, gloomy gorge, with nearly precipitous walls and choked by huge fragments of the cliffs above. Nor are the ridges always simple. Not unfrequently two are united and between them runs a boat-shaped valley, widening and deepening as it recedes from the point of junction. Usually, however, the valleys are long and narrow, and the ridges for the most part taper off gradually, while upon the average their elevation is little more than eight hundred feet above the adjacent valleys. This division, varying from thirty to sixty miles in width, reaches from the Hudson River near Rondout, where it is the Shawangunk Mountain, to the northern border of Virginia, and attains its greatest lateral extent in central Pennsylvania. Its rocks differ from those of the Blue Ridge or first division in that they are in regular layers, or, technically speaking, are stratified. It is of much economical interest to us, as in some of its valleys are found the small areas of anthracite coal upon which we are dependent.

Separated by a long curving valley from the second division, we find still further to the north-west the third and last division, the Alleghany Mountains, known in New York as the Catskills, and in Tennessee as the Cumberland. This begins near the southern border of New York and continues to central Alabama, where it disappears under the later formations. Throughout its whole extent it may be regarded as a vast plateau or table-land, having a steep slope on the east but falling off gradually towards the north-west. It is the dividing ridge between the waters of the Atlantic slope and those of the Ohio Valley. Only two rivers, the New River of Virginia, and the Tennessee cut completely through it, and these empty into the Ohio. West of the main or Alleghany axis several minor ridges interrupt the continuity of the table-land in Pennsylvania and West Virginia, while farther to the west in Ohio a few ripples are seen, so gentle that their existence can be detected only by careful investigation of the rocks composing them. The table-land character of the western slope is

well marked in both Pennsylvania and West Virginia, where great tracts of arable land, termed "glades," are found at the highest elevation. "Undulating plains, which, but for their majestic timber, would recall to mind an Illinois prairie, reach along the mountain summits for miles in length and breadth, with scarcely here and there a swell sufficiently bold to divide the waters." A recent writer, referring to the climate of this higher region, says: "The traveler upon ascending it, if not absorbed by the novelty and grandeur of its almost primeval scenery, is impressed with the singular dryness and purity of the atmosphere, the crystal limpidity of the springs and streams, and the tonic, bracing effect of the mountain air at all seasons of the year; the sensation is one of buoyancy of spirit and sudden relief from the cares of health and the fears of premature death—in fact, the most remarkable instances of human contentment and longevity in the State are found in the settlements of this mountain range."

The ridges of this division, like those of the middle mountain belt, are rudely parallel and marked by evenness of their crests. On the old stage route from the Ohio River to White Sulphur Springs, one comes full in sight of these parallel ridges as he crosses the summit of Little Sewell Mountain. Then at an elevation above that of the section east of him he sees in front the long lines, broken here and there only by gorges cut or widened by the streams, resembling a series of huge breastworks, while behind him are the Gauley and Sewell mountains, an aggregate of disconnected hills, apparently without order and to be likened only to immense masses of rubbish thrown indiscriminately here and there over the country. The scenery in many portions of this division is grand beyond description. Now, that the Chesapeake and Ohio Railroad has cut its way through to the Ohio, some of the localities along its line will become familiar to many. Among these the gorge of New River in its passage through Gauley Mountain is not the least remarkable; but hitherto inaccessible, except by tedious and painful stage-ride through the wild and lonely defiles of the Alleghany's outliers, it is comparatively unknown. Its walls, in many places practically perpendicular,

are from six hundred to one thousand feet high. From the old stage road the river, a large and rapid stream, playing among massive fragments of rocks, seems like a brook. So steep are its walls that for miles no foothold could be found for the railroad laborers, who had to be suspended by ropes until an opening could be made by the blast. For miles no wagon can reach the river from the stage-road, so that last autumn, though only thirty miles intervened between the east and west sections of the railroad, it was still necessary to go by stage from the Falls of Kanawha to White Sulphur Springs, a distance of seventy miles. Farther to the north we find the gaps of Fygart's and Cheat rims, through the subordinate range of Laurel Hill, scarcely less impressive. In the latter the walls rise to a height of more than one thousand feet above the river in a succession of narrow terraces, with precipitous escarpments, while the bed of the river is choked with immense fragments of conglomerate, some of them as large as an ordinary log-house. This is the west gate of the Alleghanies and is a fitting portal.

A NATIONAL UNIVERSITY.

THE word "University" is one of rather indefinite signification with us. So many institutions from Harvard down have assumed the title, that it is hard to determine whether its proper synonym is college, or high-school. The charitable Mr. Smith arranges that at his death, when he will have no further use for his money, it shall be devoted to the building and endowment of the Smith University; an institution teaching little but the elementary branches, and complete in all its appointments except professors and students. The roll of many a Smith University is indeed large, but it is made up in good part of those in the Preparatory Department, whose ages range from eight years upward. Now we do not object to these institutions, they do good in their way, but they have no right to the title they assume. Again, a few of our best

colleges have adopted the name of university, and have introduced some of the characteristics of such an institution into their curriculums, hoping thus to meet the demands of the case, while on the contrary they do much harm. Harvard has, we believe, abolished compulsory attendance on lectures, while the requirements for admission are such that boys sixteen and eighteen years old can pass the examinations and become students there. Now imagine a boy of that age, away from home, not *obliged* to prepare recitations daily, and will he not naturally take matters very easily and trust to "cramming" at the end of the term to get through? This he does, not because he is bad or more than ordinarily lazy, but because he is a young fellow not used to independence and fond of fun. We leave out of consideration the hurt he receives in forming habits of mental and bodily laziness, the waste of time, and the unprofitableness of cramming; for facts stuffed into the brain in that way do not remain much beyond the examination. This increase in the number of universities shows that there is a felt need for something better than we now have. Our common schools have the reputation of being the best in the world, and they are ably supplemented by the High Schools and Academies. Our colleges take the graduates of these latter and advance them still further; a very good system so far as it goes, but it does not go far enough. As yet no institution has advanced sufficiently to begin its course of instruction where colleges leave off. A National University, supported by the general government, would perhaps best meet our needs. To found such an institution and to insure its success requires money and influence enough to place it beyond the reach of the numerous rival universities which now cumber the educational ground. This is no new idea. Washington advocated it, as did also Thomas Jefferson and John Quincy Adams. Washington said: "The University would most thrive if sustained by the resources of the whole nation, and would give to the people of this country a homogeneous character, tending as much as any other circumstance, to the permanency of the Union." All efforts in this direction have thus far been without results, if we except the foundation of the Naval

and Military Academies and the State Agricultural colleges. The bill to give public lands to these latter has been rejected by Congress, but we will not be sorry for that if the land is given instead to endow a National University. Such an institution would be a vast saving in time and money to the large number of Americans who are now obliged to go to Europe to supplement their college course, and many a professional man—lawyer, physician, or clergyman—would be glad to break away for a time from his labors to attend lectures on subjects in which he is interested. In regard to the last named profession, the clerical, there might indeed be some difficulty, as we have no State religion, but for that matter every known “ism” might have a lecturer, and it might do not a little good in demonstrating to the various sects that, in fundamental matters, there is in reality little difference between them, or at least they might learn to regard each other as honest people, honestly differing on doctrinal points. There is another advantage which we must not omit to mention. Discoveries in science are not made by accident, but are the result of patient observation and investigation. To observe and investigate, a man must be enabled to devote himself exclusively to one branch of study, and not be obliged to expend his mental activity on a variety of subjects, as our college professors often must do. The attention of a German professor is directed solely to one subject, and on that he works. After most careful study and thought he writes his lectures. These he rewrites again and again as he gains more accurate or more extended knowledge of his specialty, and finally he gives the result of his labors in a book. It is this system which has advanced Germans so far in knowledge, and which has given them so many works universally regarded as the best expositions of literary and scientific subjects. It is to obtain like results that we plead for a genuine University, one supported by government, because no other could command the requisite money and influence. If it were proposed to form a university of Harvard: Yale, Bowdoin and Rutgers would strenuously oppose the plan, while were it suggested to confer the honor on Yale, the other three would oppose that just as earnestly. Some

question if we can support even *one* University, arguing that our former efforts in this direction have not proved successful; but we have failed thus far, because we have been trying to support one hundred, while we have students for only one or two. In every German university there are a score of Americans, but they are not a tithe of those who would attend them were the difficulties in language, time and expense, not so great. Would not these students remain at home if they could obtain the same advantages here as in Europe? The development of our natural resources has until lately occupied our time and thought, but now as we have more leisure, our intellectual needs are receiving more attention, and the demand for higher education increases steadily. Colleges do not any longer meet our wants; we must have something more advanced,—a University worthy the name.

EMINENT FOREIGN TEACHERS DECEASED IN 1872.

JAN. 24. Professor FRIEDRICH ADOLPH TRENDELENBURG, Ph. D., J. U. D., who was born at Eutin, in Oldenburg, Nov. 30, 1802, educated at Kiel, Leipsic, and Berlin, and had been professor of philosophy in the University of Berlin since 1833, died in that city. He was the author of numerous philosophical works.

Feb. 4. The Abbé AUGUSTE JOSEPH ALFONSE GRATRY, better known as *Père Gratry*, born at Lille, March 30, 1805, educated in the polytechnic school, and subsequently in a Catholic Ecclesiastical Seminary, director from 1841 to 1846 of the College Stanislas, Almoner and professor in the Supe-

[NOTE.—In the sketches of Eminent American Teachers deceased, in the April No. of the MONTHLY, two typographical errors occurred which are too important to be passed over without correction. The writer of these sketches did not see the proofs until it was too late to correct them. On page 165, JOHN PIERCE BRUCE should have been JOHN PIERCE BRACE; and in the seventh line of that sketch, "honorable and notable *men*" should have been, "honorable and notable *women*." Mr. Brace, we believe, never taught male pupils.]

rior Normal School from 1846 to 1852, and professor of Evangelical Morals in the Sorbonne from 1863 to 1870, died in Montreux. He was elected a member of the French Academy in 1867. His sympathy with *Père Hyacinthe* cost him his position in the Sorbonne.

Feb. 18. Prof. OEHLER, a professor of theology in the University of Tübingen, of the Rationalistic school of Baur, died in that city.

On the 6th of March, Professor THEODOR GOLDSTUCKER, an eminent Orientalist, Professor of Sanskrit in the University of London for many years, died in London. He was a man of great modesty, but a profound scholar and an able teacher.

April 1st. Rev. FREDERICK DENISON MAURICE, D.D., born in 1805, educated at Trinity College, Cambridge, and having taken orders in the Established Church, became Chaplain and Reader at Lincoln's Inn, and in 1846 Theological Professor in King's College, London. About 1860 he resigned his professorship, but devoted himself with Charles Kingsley and others to promoting the education of the working classes. He died in London.

On the 19th of April, RICHARD WESTMACOTT, R. A., F. R. S., an eminent English sculptor, died in London, aged 73 years. He had been since 1859 Professor of Sculpture in the Royal Academy of Design.

In April also died at Geneva, Prof. FRANCOIS JULES PICTET, called DE LARIVE, an eminent Swiss Naturalist, professor and author, born in Geneva in 1800, educated in the Academy of Geneva, and for more than forty years professor of Zoology and Anatomy there. His contributions to Natural Science were numerous and valuable.

Rt. Rev. THOMAS VOWLER SHORT, D.D., formerly Bishop of St. Asaph's, who died April 13, had been for some years a tutor of Christ Church, Oxford. He was an eminent scholar, ranking as a double first class at Oxford, where he took his degree.

In May died JOHANN KARSTEN VON HAUCH, a Danish

poet, scholar and professor, born at Frederikshald, May 12, 1790, educated at Soroe, and for many years professor of physics in the Academy of that city. In 1846 he was called to the chair of Scandinavian Literature at Kiel; in 1848 he was deprived of his professorship, but through the intervention of the Queen was provided with a home at Frederiksberg, and on the death of Oelenschlager was appointed professor of Aesthetics in the University of Copenhagen, which he retained till his death. He was regarded as the most eminent of the Danish poets.

ROBERT PRUTZ, Ph. D., who died at Stettin, June 21, in his 57th year, was an eminent poet, historian, dramatist and revolutionist, educated at Berlin, Breslau and Halle, and was professor of Literature and History at the University of Halle from 1849 to 1859, when his failing health compelled his resignation.

BENITO JUAREZ, the late President of Mexico, who died July 18, at the age of 70 years, was for ten years (1834-1844) Professor of Canonical Law in the Institute of Oaxaca.

The Danish Lutheran Bishop, NIKOLAS FREDERIK SEVERIN GRUNDTVIG, who died at Copenhagen Sept. 2d, at the age of 89 years, after many long and bitter conflicts, polemical, theological, and political, had been from 1822 to 1849 professor of History in the University of Copenhagen.

LUDWIG MARIA FEUERBACH, a German philosopher and atheist, who died at Hanan, Sept. 16, was more a lecturer and theorizer than a teacher, but did give instruction at the University of Erlangen as a tutor in 1828 and 1829.

JEAN HENRI MERLE D'AUBIGNE, D.D., who died at Geneva, Oct. 21, at the age of 78 years, theologian, historian and poet, had been professor of Church History in the Theological Seminary of Geneva since 1830.

JACQUES BABINET, a French academician and physicist, who died Oct. 24, in Paris, at the age of 78, was educated at the Lyceum Napoleon, the Polytechnic School, and the Military School at Metz, and soon turned his attention to teaching. From 1815 to 1825, he was professor of Mathe-

atics successively, at Fontenoy-le-Comte, Poitiers, and the College of St. Louis. From 1825 to 1828, he delivered his course of instruction on Meteorology at the Athenæum, and after teaching physical science in the different Colleges of Paris for ten years, succeeded Savary in 1838 in the College

France, and retained that professorship for many years, becoming a member of the Academy of Sciences in 1840, and subsequently associate astronomer at the Bureau of Longitudes.

In Oct. also died in Sicily, Signor PAOLO EMILIANI GIUCCI, aged 60 years. He was an orator, historian, *litterateur* and revolutionist. He was professor in the University of Pisa in 1849, and professor of Aesthetics in the Royal Academy of the Fine Arts in Florence from 1859 to 1862.

On the 28th Nov., Dr. JOHANN CHRISTIAN FELICE BAEHR, eminent German philologist, died at Heidelberg, aged 74 years. He was born in Darmstadt, June 13, 1798, educated at the University of Heidelberg, and had been professor of Classical Literature in the University from 1821 to 1872. His scholarly edition of Herodotus and his other classical works form his best monument.

AN official "Report on the Losses sustained by the Public Libraries of Paris, during the Prussian Siege and the Commune," shows the latter is responsible for all the actual losses. The Library of the Louvre was totally destroyed; so, also, were the 120,000 volumes of the Hotel de Ville, especially rich in the history of Paris. There were also destroyed the minor libraries of the Council of State, the Court of Accounts and the Court of Appeals, with 50,000 volumes of jurisprudence; the Legion of Honor, the Society of Advocates, the Ministry of Finance and the Prefecture of Police—the latter library being rich in French newspapers.

Teacher, (to his pupils)—"Why should people celebrate Washington's birthday any more than mine?"

Pupil, (promptly)—"Because he never told a lie."

Teacher—"School's out."

GEOGRAPHICAL NOTES.

UNITED STATES.—Still not satisfied with the common methods of teaching geography! Could anything be more unreasonable! The *Maine Journal of Education* for February had two contributions on "Local Geography" and "Geographical Text-books." From the former we make some suggestive extracts:

"It is the testimony of all who have had much to do in examining teachers and schools in this State, that there is dense ignorance of local geography. One school supervisor, in his report last March says, 'The teachers who come to me for examination are very deficient in local geography. The majority are unable to locate even approximately, twenty-five per cent. of places as important as Liverpool.' Examinations of teachers which have been given by the writer, or concerning which he has positive knowledge, have given among other similar results, the following: Halifax has been located in England, Berlin in Siberia, Glasgow in Turkey, Germany in Asia; or if in Europe, south or west of France, London south-east of New York, the Volga in Spain, and the Pyrenees in Scotland. These answers were given by those who were well posted in every other subject taught in our schools. This ignorance does not spring from a verbal unfamiliarity with the names of these places, for they have had them at their tongue's end for years."

"The number of towns in France and European Turkey, which are given in two of the geographies which are in use in the schools of this State, have been counted; one gives 113 in France and 60 in Turkey, the other 166 in France and 32 in Turkey. Is it any wonder that confusion is the result of the study of such maps for our children?"

The next writer arraigns "the mass of text-books published on geography" as not meeting "the wants of our common schools:"

"They contain too much matter. They are geographical reference books instead of school text-books. It may be asked 'What do they contain which might be omitted?' I answer, much; half, yes, two thirds of the towns and rivers given on each map. The descriptive part of the book is often only a recapitulation of what is, or should be, covered by the map questions. The classification is not good. The pupils are told that the products of Ohio are corn, wheat and oats; those of Indiana, wheat, oats, and corn, and those of Illinois, oats, corn, and wheat. Why not group the States which produce

grain together, and also those which produce tobacco, cotton, etc.? This would save much trouble, and would be vastly easier for children to learn. The area and population of each State is given, and children are expected to commit these to memory. As if it were possible for little children, or even big children, to remember the square miles and number of people in every State and Territory in the Union! What absurdity! The chief towns are grouped together in the descriptive text. This is needless, as these should be learned from the map. The natural features of each State are minutely described. This also is unnecessary. If pupils have a general knowledge of the surface of a country as a whole, and a minute knowledge of their own and neighboring States (which should be learned from the teacher and not from the book), it is sufficient for all practical purposes."

—"A method of Teaching Geography," by Hon. E. E. White, editor of the *National Teacher*, is copied in the *Rhode Island Schoolmaster* for March. The oral or primary course recommended is substantially the same as that quoted in our February Notes. Mr. White, after remarking that "The Geography Question" has engaged the attention of American teachers for the past ten years, asks:

"What is the practical result of this discussion? To what extent has it actually changed the instruction of the schools? We have taken some pains to obtain information on this point, and are assured that encouraging progress has been made in several directions. Increased attention is given to oral instruction; less time is wasted on unimportant details, and in memorizing the descriptive text; and, here and there, a teacher is making the facts and laws of physical geography the basis of instruction. The discouraging fact is, that no one of these changes has as yet reached the majority of American schools. The great majority of our teachers are still 'going through' the geographies in the old way.

"One reason for this state of things is the very general impression that the adoption of more rational methods of teaching geography depends on the introduction of text-books embodying these methods. It is doubtless true that a suitable text-book is a valuable aid in teaching any branch of study, but no intelligent teacher need follow a wrong method because it is presented in the text-book used by his pupils, and especially is this true in teaching geography. The very highest success has been attained in connection with the least progressive text-books found in the schools of the country. Indeed all experience shows that a rational method of teaching geography is less dependent on a good text-book than is a poor method. The more stupid the method, the more essential is a good text-book."

—A writer in the *National Teacher* for March quotes some amusing extracts from a Rhyming Geography in vogue fifty years ago ("Poetic Description of the United States of America; by Victorinus Clark." Hartford, 1819.) has the same kind of value that an old atlas of that day would have. The rhyming and singing method was revived thirty years later, as we happen to know, and as a species of mnemonics we would not say that it was wholly worthless. Here are some of Deacon Clark's stanzas:

Of Rhode Island :

"All Christians here support religion
By voluntary contribution;
For contracts have no binding force,
Made with the clergy, and of course
Reduced to very low condition

Are morals, virtue, and religion.
West of the Bay's a moral waste
Unknown to improvement, science, taste
The people there are dissolute,
Of every privilege destitute;" etc., etc.

Of Virginia :

"Whole counties here no house afford,
No altar sacred to the Lord;
For this state's laws make no provision
For the supporting of religion.

"Here are two classes, and no more,
The very rich and very poor,
On their plantations separate
The planters live in princely state.
Tho' here the base concomitants

Of slavery, pride and indolence,
Have tainted and depraved their morals
And op'd the sluices to all evils;
Yet men of worth are sometimes found,
And men of genius here abound:
To wit, the patriot Washington,
With Jefferson and Madison,
Our worthy President Monroe,
And others but a grade below."

Of Ohio :

"The town of Marietta stands
Upon Ohio's Western strand;
This village is becoming wealthy,
And is accounted very healthy;
But Gallipolis, a town
First peopled from old France, and found
Upon a bend of this great river,
Has suffered from the Yellow Fever.
The town of Chillicothe stands
Begirt with fine luxuriant lands,
Upon the banks of the Scioto,
One hundred miles from the Ohio.

* * * * *

"Athens as yet of puerile size
Up the fine stream Hockhocking lies;
The only college in this state,

(By law established but of late.)
In this delightful village stands
Endowed with many fertile lands.

* * * * *

"Fine springs every where abound,
Good mill-seats are rarely found.
Bears and deer are often seen,
Fish abound in every stream;
The woodlands boast the sugar-tree,
The chestnut, oak, and hickory,
And other kinds a double score,
With the majestic sycamore;
Near Marietta, one of these
Ancient Titan-planted trees,
By actual measurement was found
To be just sixty feet around."

BRITISH AMERICA.—The first volume of the Dominion census reports for 1871 has just been published, from which it appears that the total population is 3,485,761, divided as follows: Ontario, 1,620,851; Quebec, 1,191,516; New Brunswick, 285,594; Nova Scotia, 387,800. Nine cities have population of over ten thousand, viz.: Montreal, 107,22

uebec, 59,699; Toronto, 56,092; Halifax, 29,582; St. John, 18,805; Hamilton, 26,716; Ottawa, 21,545; London, 15,826; Kingston, 12,407. These have all maintained their relative rank since the last census (1861), and have all increased the number of their inhabitants, except Quebec and Kingston, which, however, have meantime lost comparatively large arrisons, formerly included in the count. In twenty years, Montreal has more than doubled in population. In all Canada the number of the males exceeds that of the females by nearly 43,000, so that the Canadian emigration to Massachusetts is perhaps not an unmixed evil. Of Indians there are 23,035, and Africans 21,496; Germans and Dutch, upwards of 232,000, of whom about one-tenth only were born in Germany. Those of French origin are put down at 282,940, of whom only 2,899 were born in France. Fourths of the population are native-born. Coming now to religious faiths, and omitting Atheists, Deists, and Pagans (who are all gravely recorded), we find in the Dominion 4 Mormons; 1,115 Jews; 4,870 Universalists; 2,275 Unitarians; 7,345 Friends (a falling off, as usual); 1,492,029 Catholics; 567,091 Methodists; 544,998 Presbyterians; 1,049 adherents of the Church of England; and 239,343 Baptists. The Protestants are thus about half a million in excess of the Catholics. Such is a comprehensive summary of the people whose annexation to the United States seems not improbable at no very distant day.

EUROPE.—Taylor's "Words and Places," of which a third, compact edition has been published by Macmillan & Co., N. Y., and may be had for two dollars, is a work which we especially commend to committee-men who are desirous of contributing something to the public school which they attend, and can't afford to give a globe, an atlas, or a gazetteer. It ought to be in every school-room in which geography is taught. The teacher should be familiar with it, and the scholars could not fail to enjoy and profit by it. The following extracts will give some idea of the contents:

The southern face of the Alps is bare and precipitous, and, from meteorological causes which are well understood, the district is peculiarly liable to sudden and violent falls of rain. The rivers of Lombardy are, in consequence, charged with an exceptional amount

of alluvial matter. The whole plain of the Po is gradually rising, so much so that at Modena the ruins of the Roman city are found forty feet beneath the surface of the ground. Hence at the embouchures of the Po and the Adige we might anticipate rapid changes in the coast-line; and this we find to be the case. We find a range of ancient dunes and sea-beaches stretching from Brandolo to Mesola. Ravenna, now four miles inland, stood on the coast two thousand years ago. One of the suburbs of Ravenna is called *Classe*, a corruption of *Classis*, the ancient name of the port, which was capable of giving shelter to 250 ships of war. *Classe* is now separated from the sea by a dense forest of stone-pines two miles in breadth. The Adriatic takes its name from the town of *Adria*, which was its chief port B. C. 200. *Atri*, the modern town upon the site, is now nearly twenty miles from the coast." (P. 242.)

"The tendency among the German nations is to develop the sibilants and gutturals; among the Romance nations to suppress those and develop the mutes and liquids. Thus, in the name of the river Atesis, how harsh is the German name—the *Etsch*; how soft and harmonious the Italian development of the same word—the *Adige*. Again we may compare the German *Lüttich* with the French *Liège*, or we may contrast the German change of Confluentes into *Coblentz* with the soft effect produced even in cases when the Italians have introduced sibilants, as in the change of Florentia into *Firenze*, or Placentia into *Piacenza*. But the best illustration of these phonetic tendencies will be to enumerate a few cases where the same root has been variously modified by different nations. Let us take the Latin word *forum*. The Forum Julii, in Southern France, has become *Frijus*; and, in Northern Italy, the same name has been changed to *Friuli*. In the Emilia we find *Forli* (Forum Livii), *Fossombrone* (Forum Sempronii), *Ferrara* (Forum Allieni), and *Fornovo* (Forum Novum). In Central Italy we have *Forcassi* (Forum Cassii), *Fiora* (Forum Aurelii), *Forsumma* (Forum Flaminii), and *Fortimpopoli* (Forum Popilii). With these compare the German name *Klagenfurt* (Claudii forum), the Dutch *Voorbourg* (Forum Hadriani), the French *Feurs* (Forum Segusianorum), and the Sardinian *Fordongianus* (Forum Trajani)." (P. 262.)

ASIA.—"Ah Sin" has become proverbial through Mr. Bret Harte's characterization of him as the "heathen Chinese," and the following extracts from Medhurst's "Foreigner in Far Cathay" (New York: Scribner, Armstrong & Co.), as throwing a little light on his name, will perhaps not be unwelcome:

"Chinese surnames, which, as I have remarked in a former chapter, are but limited in number, are as a rule composed of but one character. Names are generally made up of two, and characters

having a felicitous meaning are always selected. The surname always precedes the names. For example, supposing a man's name to be *Kung*, 'Palace,' and his names *Pao Yeng*, 'Precious Recompense,' his card would indicate him as *Kung Paoyeng*, 'Palace Precious Recompense.' Another man's surname may be *Wang*, 'King,' and his name *Ta Leuh*, 'Great Six,' probably from his being a sixth child or son. He would be styled *Wang Taleuh*. In some provinces it is common amongst intimates to add the familiar prefix of *Ah* to the second character of the name: as, for example, the two persons just named would be severally called, *Ahyeng* and *Ahleuh*. And this will account for the numbers of *Ahfoos*, *Ahchows*, *Ahlums*, etc., to be met with amongst the natives of Canton."

"Names of provinces, districts, cities, rivers, mountains, etc., derive their signification for the most part either from some characteristic of the locality or some legendary or family association connected with it. And it is seldom that any characters but those of a felicitous meaning are employed: *Quangtung* (anglicized into Canton) and *Quangsi* signify 'broad east' and 'broad west;' *Honan* means 'south of the rivers;' *Hupeh*, 'north of the lakes;' *Shantung*, 'east of the hills;' *Hankow*, 'mouth (or port) of the Han;' *Shanghai*, 'ascending (or on) the sea;' *Pekin*, 'northern capital;' *Nankin*, 'southern capital;' *Newchwang*, 'bullock farms;' *Foochow*, 'happy district;' *Tientsin*, 'celestial harbor;' *Amoy*, 'summer gate;' *Chang Kea Khow*, 'the gate of the Chang family;' *Tien Shan hu*, 'lake of the celestial hills;' and so on."

From these names one obtains a small Chinese vocabulary: *Peh*, north; *nan*, south; *tung*, east; *si*, west. *Ho*, river; *hu*, lake; *kow*, embouchure; *tsin*, harbor; *hae*, sea. *Shan*, hill, etc.

Periodical Literature.—An article on the "Antarctic Regions" will be found in the *Cornhill Magazine* for March. *Every Saturday* for March 22: "A Brazilian Market at Sunrise."

Cartography.—An excellent map of the San Juan or Haro Archipelago, in Petermann's *Mittheilungen* for Jan. 30, shows the disputed boundary of British and American territory in those waters. A map of Malta, drawn on the same scale, is annexed to indicate the smallness of the land area involved in the late international controversy. The United States gains, and England loses, only about eight-fifths as much ground as is contained in the famous little island of the Mediterranean.

—Dr. George Schweinfurth, the celebrated traveler, will shortly bring out his new work, the result of three years' travel and adventure in Central Africa. The work will be issued simultaneously in English, French, Russian, German, and Italian. It will form two

volumes, and will be illustrated by about 130 woodcuts, from drawings by the author. The English publishers are Messrs. Low & Co. —*Athenaum*, March 8.

—The Bremen Society for the German exploration of the North Pole is about to publish, in Leipzig, as the result of the voyages of the *Germania* and *Hansa*, under the command of Capt. Karl Kolde-
wey, "The Second North Pole Exploration in the Years 1869-'70," in two volumes, profusely illustrated with woodcuts, chromolithographs, copper-plates, maps, etc. An English translation is in the press.—*Ibid.*

Photography.—How delightful would be a voyage half round the globe, stopping at will at the principal points of interest, and bringing home faithful sun-pictures of natural landscape, of famous cities, of the various races of men encountered. Starting at some port in the south of Europe,—say, Trieste—one might choose to sail to Algeria and Morocco, pausing in the straits of Gibraltar to view the mountain fortress; thence to the Canary Islands, for a glimpse of Teneriffe; thence to Lower Guinea; again on to Cape Town and the Cape of Good Hope. From here the course lies to Ceylon, touching at the Point de Galle; thence to Java and Sumatra, and northward to Singapore; next a visit to Bangkok and to Saigon, and then to the Chinese ports—Hongkon, Canton, and Shanghai. Still further north we may even get a sight of Corea and its singular people; and, crossing over to Japan, conclude our voyage at Nagasaki and Yedo. How charming would such an excursion be, yet how difficult, how impossible for most of us to make. It is, nevertheless, an account of the route pursued by Mr. Wilhelm Burger, photographer to the Austrian East Asiatic Expedition, whose stereoscopic views constitute one of the finest and most remarkable series in the stock of the Messrs. Anthony, at 591 Broadway. Any one who procures them may without discomfort or risk, almost without expense, accompany him at every step. For the benefit of those at a distance we shall now instance a few of these memoranda of travel.

Trieste from the Lighthouse (No. 8) shows the amphitheatrical construction and mountainous environs of this most beautiful city. Steamers which ply the Adriatic and perhaps traverse the Suez Canal lie directly before us, moored to piers of solid granite which put to blush the flimsy and rotten wharves of our great metropolis. *The Port of Algiers* (No. 16) with its fortified mole and artificial basin, shows one also a portion of the white-gleaming city and the broad expanse of the Mediterranean. The view of *Gibraltar from San Roque* (No. 50), looking southward, shows to perfection the cathedral-like or lion-like form of this historic rock, including the Bay of Alge-ciras. Mr. Burger's view of *Cape Town* (No. 81) is admirably chosen to display the curious outline of Table Mountain—a background such as probably no other city in the world can boast of, not except-

ing Trebizond. *The Chinese Quarter in Singapore* (Singapore, the lion city—No. 88) fairly represents the general appearance of this enterprising entrepôt, which is remarkable less for its buildings than for its rapid growth since the English founded it in 1819. The Chinese population here constitutes 50,000 out of the total 80,000, has nearly all the trade under its control, and is accumulating great fortunes. From Bangkok we bring away a single specimen of the peculiar Siamese architecture—the *Royal Tombs* (No. 328), in front of which stand a colossal stone Gog and Magog crowned with stove-pipe hats! In No. 186, *View of Hongkong*, overlooking the roadstead, we have all the elements which go to make up a desirable stereoscopic view. The same may be said, in its way, of No. 166,—a group of five of the Chinese inhabitants playing a game of chance; expression, attitude, costume and all are admirable. Sailing up the river we reach *Canton*, No. 188, in whose waters we notice numerous gondola-like craft driven by Chinese sailors. Omitting any general view of Shanghai, we select No. 174—a colossal bronze statue in the neighborhood, which we judge to be that of Buddha. At least it bears a striking resemblance to the Daibutz at Kamakura in Japan, as figured in Pumphelly's "Across America and Asia," and his description "it represents Buddha sitting, in the Oriental manner, on a lotus," applies exactly to the Shanghai image, which in mere workmanship appears to be superior to the other. There is nothing to determine the scale, however. No. 175 is a graceful example of the pagoda, also near Shanghai. The low buildings adjacent to it show how conformable its architecture is to the soil and the native genius. We take leave of the Flowery Kingdom with No. 160, an amusing portrait of "Young China" and his bare-footed maid attendant. No. 304 is a full length portrait of one of the singular but by no means contemptible race of the Coreans. Ethnography may also be studied in No. 249—*Academicians of Nagasaki*—and No. 239, *Officers*, of the same city; two groups embracing altogether twenty-seven figures, sitting and standing, and fairly typical of the race which is now taking on the most sudden and profound revolution which history records, and with which we are destined to have a great and growing intimacy. Descendants of these very men, whose faces now recall the American Indian, now the negro, and again the full-blooded European, may yet be governors of our States, representatives and Senators at Washington, and ——— what the imagination pleases! Let us study well the adults, but especially let us not neglect the children. Here, in No. 243, is a kneeling row of seven of them, all little ladies except one; curious little almon-eyed mortals, staring and blinking at the camera, but never dropping their fans or losing their lady-like propriety. What charming women they may grow up to is shown in No. 250, a lady of Nagasaki, whom the dress-maker's art was not needed to make comely, but who is draped with the utmost taste. Nagasaki itself is pictured for us in No. 275—perhaps the loveliest

view of all we have mentioned: mountains in the rear, the bay below, and the whole set in a frame made by a Japanese pine on the left and an unfamiliar but very graceful tree on the right. We pass to Yedo, paying our respects to a lady with the guitar of the country (No. 320,) she too being comely and well dressed. The "muscular heathen" is shown to advantage in No. 316—*Japanese "Cudi"* (firemen), with their preposterously small engine and preposterously large bucket-tubs; and in No. 260, representing a heavy Japanese sedan-chair or palanquin, borne by two stalwart coolies.

Not to slight wholly our own continent, let us refer generally to the fine Canadian views of Mr. W. Notman, and instance that of Ottawa and its south timber slide (or sluice), No. 22,717; that looking across the Chaudière Falls of the Ottawa River, No. 22,712; and a fine perspective view of the Victoria Bridge across the St. Lawrence at Montreal, No. 61,063.

THE DEPARTMENT OF EDUCATION IN JAPAN.

THE Supreme Council of Japan is the Dai Jo Kuan, and beneath this are nine Departments. Each of these concerns itself with special governmental affairs, and conducts the great enterprises which the nation has undertaken. Under the dynasty of the Shō-Guns, these "Boards," as they were then called, were scarcely more than nominal organizations, and one or two of them had hopelessly fossilized.

After the civil war and the accession of the Mikado to full power, a new life animated each department, and the spirit of change and reform seemed to possess every officer, from the Minister to the petty official.

Japan, as she has been since her great unifier, Iyeyasū, left her, seems an orientally exaggerated version of the legend of Thorn-rose. The nation and the government had congealed to political immovability. A sleep of two centuries and a half fell upon the Japanese, and the apparition of an American fleet of *steamers* in the bay of Yedo, at the very doors of the capital, was like the first knock of the delivering prince at the gate of Thorn-rose's castle. Then followed the decay of the Shō-gun's power, the Daimios'

refusal to come to Yedo, the civil war, and the accession of the Mikado to full power. The youngest scion of the ancient line of Emperors now sits on his throne in Yedo, having dispatched an embassy to traverse the globe. From Commodore Perry at Kanagawa to Iwakura in Washington, there was a chain of events as romantic, and far more wonderful, than the awakening of the Sleeping Beauty and the people of her enchanted castle.

The nine departments in Japan are : 1st, of War ; 2d, of the Navy ; 3d, of the Treasury ; 4th, of the Settlement and Reclaiming of Waste Lands ; 5th, of Public Works ; 6th, of Justice ; 7th, of Religion ; 8th, of Education ; 9th, of Foreign Affairs. It was the Kai Takū Shi, or Department of Settlement, that engaged the American Scientific Commission, now partly in Yedo, and partly in Yezo, headed by Gen. Capron, and Prof. Antisell. It was the War Department that secured the services of the French Military Commission of sixteen of the best French officers for the instruction of the native soldiery. The Department of Public Works employ nearly two hundred foreigners, mostly Englishmen, in the various enterprises of Railways, Lighthouses, Telegraphs, Public Architecture, etc. The Department of War always presents, and succeeds in getting, the fattest budget ; next in order comes that of Public Works ; and next that of the Navy ; while the Department of Religion comes last, being little more than a shadow. Between each of the departments a spirit of the greatest jealousy and emulation exists. It seems to be the chief idea of each Kiyō, or Minister, to obtain as much power, and to base that power upon as much financial certainty as possible. Thus, although jobbery and corruption flourish, the national enterprises move on as fast as the possibilities of the situation will allow. Some enthusiastic reformers insist that the main, and almost the only business of the Government, is the education of the people. His Excellency Oki sama, the present efficient Minister of Education, appears to be such an enthusiast. He is a native of the province of Hizen, who, after the civil war, was appointed Kiyō or Minister of the Mim Bu Sho, a department which formerly superintended the census, boundaries, buildings, repairs, bridges, agriculture, etc. ; in short, the Department

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of the Interior. Under the Shōgunate, no Department of Education existed. The Dai Jo Kuan, or Imperial Council, then authorized Oki sama to change the vowel in the first word, and gave him power to remodel the old organization, and to place the new Mom Bu Sho upon nearly the same footing as the Department of Public Instruction in France. It is mainly after the French system that the entire educational system of Japan is now modelled. The reason for this, is chiefly, because the system of France is so simple, i. e., so centralized, uniform and graded. Indeed, it is only by centreing everything in Yedo that Japan has thus far been able to achieve so promptly her mighty reforms. It is only by the power of centralized intelligence and force that New Japan will be able to overcome the inertia of the masses in the country, and the conservatism of the interior towns.

One of the multitude of unsettled problems in Japan is, how to blend central power and local government so as to secure harmony and peace. That these are not yet secured is evident from the not infrequent insurrections in various parts of the empire.

The most striking trait in the character of a 19th century Japanese is his utter disregard of the past, his contempt for things Japanese, his love of things new and foreign, and his desire to cut away the bridges over which he has passed. No sooner was the New Department of Education clothed with full powers, than the old Chinese College in Yedo,—the fountain of Japan's previous culture, its Academy,—was closed, and the study of Chinese was in every way discouraged. The school of foreign languages and science, called the Imperial College in Yedo, was purged of all students who were learning merely to translate foreign languages, and only those were retained who would learn to read, write, and speak the language they were studying. A corps of translators had long been a useful branch of the Mom Bu Sho, and had translated such books as Chambers' Information for the People, Wayland's Moral Science, Wheaton's International Law, and a score of other important works. But this was work done in Japanese. Since we began the present writing, we have learned that this work has ceased and the corps has been abolished.

From various cities in the interior we learn that the Chinese schools have been practically "disestablished," and in some cases, closed; while those schools in which foreign languages are taught have been infused with new pecuniary and scholastic life.

During the past ten months, the time and energies of the Minister and his co-workers have been taxed to elaborate a scheme for the education of the entire people. This scheme includes all between a school in which the i-ro-ha (Japanese A B C) is taught, to a full-grown university—the growth of years, decades or centuries. The circular of the Mom Bu Sho now lies before us, and from it we get our facts. This gigantic prospectus first maps out the Empire into eight grand divisions, in each of which there is to be a university. It is expected that, in course of time, there will be in each university the regular faculties of law, medicine, philosophy, science and theology. (?) The idea of institutions like, and equal to Harvard and Yale, is what the Japanese aspire to. In each grand division there are to be thirty-two High Schools or Academies (Fr. Académie, Gr. Gymnasium.) These are to be schools of foreign languages and science; all the instruction being in English, French or German.* After the Academies, there are to be in each grand division 210 grammar schools, in the higher classes of which foreign languages are to be begun. Beneath these are the village, or public primary schools, which are for boys and girls, from the age of six to fourteen. These are to number in all 53,760. In these primary schools all the instruction will be in Japanese, some of the Chinese classics will be read, and the most important Chinese characters will be taught. We however may live to see the Japanese language transliterated, and the study of hirakana, katakana and Chinese utterly abolished. The basis of education is to be on the foreign methods, and translated text-books, mostly American, are to be used.

To supply native teachers, who can teach in Japanese, after the foreign style, a "normal" or training school has already been opened in Yedo, under the superintendence of a skilled instructor from San Francisco. It is at present attended by twenty-five young men.

In the academies the pupils pay \$5 per month for tuition, and in the universities they will pay \$7.50. From the academies one hundred and fifty picked students are to be sent abroad yearly, and will be supported on a stipend of \$1,000 per annum. From the universities thirty will be annually chosen to go abroad and will receive \$1,800 yearly. Of the students in the academies, fifteen hundred are to be rewarded with scholarships; that is, they will be supported by the government.

This paper-scheme looks grand. It sounds large and broad. It seems at first-sight preposterous, yet it has been elaborated after nearly a year of hard work and careful inquiry into details. The Japanese do not expect to carry it out and complete it in a day, or in a year. It is the work of the future. Yet even now the Minister and his co-laborers are straining every nerve to make the paper schemes palpable and fruitful facts. They are beginning to train teachers, to organize village schools, to canvass the districts which as yet have no instruction. They are beginning from the bottom. They will be helped vastly when the small army of their educated young men return home from Europe and America, bringing their spoils with them.

We have no room in this paper to speak of the actual work accomplished. Suffice it to say, that it is more than encouraging. They are now laying the foundations of the universities in their academies. They desire to have great universities, and they know that these are not the growth of a day, yet they have planted the seed, and have faith in the harvest.

YEDO, Feb. 20th, 1873.

WILLIAM E. GRIFFIS.

A SCHOOLMASTER gave out one morning as a reading-lesson to his first class, that portion of the "Merchant of Venice" in which the "pound of flesh" scene occurs. The reading finished, he asked the class what Shylock meant when he said, "My deeds upon my head." "Well," said the tallest boy, "I don't know unless he carried his papers in his hat."

A DONKEY RIDE IN CAIRO.

WE must by all means take a donkey ride, and in no place in the Orient can we do it in better style than in the city of Cairo. Not being accustomed to this mode of conveyance, and moreover being slightly afflicted with modesty, we determined to steal away from our company about sun-down, and be initiated alone. The donkey boys are watching for us. We try to seem indifferent. But they know by a sort of instinct that in our heart we are cogitating the important subject of taking a ride. So they make for us, each dragging his donkey with him. The little animals are not much larger than Newfoundland dogs, and they are nicely caparisoned, each with a comfortable saddle and quite an ornamental bridle. Like their masters they are exceedingly lively, and, one following another, we are soon completely surrounded by donkeys, and donkey boys. The head of one animal is thrust against us. The tail of another comes in close proximity. The saddle of a third, as it brushes past, almost carries the buttons of our coat with it. And while thus a dozen of these creatures are flying around us, the boys who have them in charge, in one hideous Arabic concert set up a yell for our patronage.

We begin to wish we had never seen or thought of a donkey. Indeed, hard as it is to confess, we all but think ourselves a poor ass. To prove we are not, we indignantly order the whole troop away, and tearing ourselves from the crowd, pursue our course to the hotel.

But in a few moments, glancing around us, we see a nice looking donkey near by, and he and his driver are alone. Now is our chance. Speedily we mount. This is just what we should have done in the first place. The Arabs are quick, and if you do not want to be beleaguered with a crowd of assistants in this country you must at once choose your man or your boy. As soon as you signify to one you have selected him the others will leave you. But as long as you are undecided they all regard you as fair game, and rush for you, and the longer you parley the greater will be the number of your friends, and the louder the din created by their offers to serve you.

Well, here we are at last on our donkey. To mount him was very easy. Our legs we feel are very imposing in their appearance. They almost touch the ground. How we would like to have our likeness now taken for the benefit of our friends at home! Away we go. Our donkey has a pleasant little canter, but very soon is tired of this gait, and comes down to a walk. He does not understand English, and so it is useless for us to talk to him. But this is quite unnecessary. The donkey boy is just behind. He never leaves the beast he has in charge, but always follows him closely. And now he punches him with a stick, a short stiff stick, which he carries in his hand for the purpose. The effect is magical and instantaneous. The donkey gives a sudden spring, and the rider is uncertain for a moment whether he will keep the saddle or go over the animal's tail. He succeeds in retaining his position. Presently however the donkey, wearied with his extraordinary effort, drops with a jerk from a run to a walk, and then the traveler feels a strong inclination to pitch over the head of the beast. These feats of the donkey and his driver are expected every minute or two, and at length our fear yields to recklessness, and we regard our ride as the funniest thing we ever experienced.

What a pity all the children we know in New York and elsewhere could not be present to see us perform! We are sure no circus rider ever seemed half so attractive, and as for John Gilpin, his ride was no circumstance in point of novelty to ours.

Wherever we go in Egypt or Syria we see these little donkeys. Nearly every native man has one. Sometimes he leads him, sometimes rides him; sometimes the animal follows like a dog. Occasionally a man and his wife are both mounted upon one of these puny creatures. It matters not; the patient animal bears the load, and never turns around like Balaam's ass to rebuke his master. We have many asses in our country, but none so useful as the Oriental donkey.

A NEW YORK TEACHER ABROAD.

O S A K A .

IN a recent number of a Japanese newspaper the advantages of education are very forcibly dwelt upon, and as proofs of the beneficial influence it has upon the morality of a nation, certain customs of the people of "North America" are cited. There, it is stated, the inhabitants never fasten their house-doors at night, and if one of them sees any valuable lying in the roadway he goes on his way, leaving it untouched, for no one in those happy regions coveteth his neighbor's ox, nor his wife, nor his ass, nor anything that is his. And the secret of this virtuous conduct is that that enlightened land is blessed with abundance of schools whereat its children are taught "to love virtue for virtue's sake." In conclusion, the writer indulges in the confident hope that, now that Osaka has had its school accommodation so largely increased, its inhabitants will learn to become as free from covetousness as those of the country whose precise position in the Western hemisphere is so indefinitely pointed out.

Granted the truth of the premises—that a plentiful supply of schools will in due time convert the rising generation of this city into a community as scrupulously honest as that of the mysterious country before referred to—and we ought to congratulate the good people of Osaka at the approach of so devoutly to be wished for a consummation. For, in truth, I doubt much whether any city ever saw its school accommodation increased at so marvellous a rate as Osaka has witnessed during the last four months. The view from a *hinomi* or fire-look-out in the centre of the city is remarkable; in every direction the belfries, complete or in process of erection, of the new school houses may be seen. Most of these schools are calculated to accommodate 750 pupils. To each school three native teachers are to be appointed, one for writing, another for reading, and the third for arithmetic. The salary to be paid to these teachers is fifteen dollars per month.

Some of the new district schools are very pretentious looking buildings, all having more or less of a foreign aspect, owing to their possessing glass windows. Some of them

are brightly, not to say gaudily painted, green being evidently the favorite color for the wood work ; one I saw had its doors painted red, white, green, yellow, and two or three other colors—but that was an exception—generally two or three colors are deemed sufficiently lively. Most of the school houses are two and some are three stories high. In the cupolas, with which nearly all of them are surmounted, a large bell is to be hung, on which the hours are to be struck.—*Hiogo News Correspondent.*

ANIMALS NOT GOVERNED SOLELY BY INSTINCT.

WHAT is instinct? It is “the faculty of performing complex acts, absolutely without instruction or previously-acquired knowledge.” Instinct, then, would enable animals to perform spontaneously acts which, in the case of man, presuppose ratiocination, a logical train of thought. But, when we test the observed facts which are usually put forward to prove the power of instinct, it is found that they are seldom conclusive. It was on such grounds that the song of birds was taken to be innate, albeit a very ready experiment would have shown that it comes from the education they receive. During the last century Barrington brought up some linnets, taken from the nest, in company with larks of sundry varieties, and found that every one of his linnets adopted completely the song of the master set over him, so that now these linnets—larks by naturalization—formed a company apart when placed among birds of their own species. Even the nightingale, whose native song is so sweet, exhibits, under domestication, a considerable readiness to imitate other singing-birds. The song of the bird is, therefore, determined by its education, and the same thing must be true as to nest-building. A bird brought up in a cage does not construct the nest peculiar to its species. In vain will you supply all the necessary materials : the bird will employ them without skill, and will oftentimes even renounce all purpose of building any thing like a nest. Does not this well-known fact prove that, instead of being guided

by instinct, the bird *learns* how to construct its nest, just as man learns how to build a house?"—*Popular Science Monthly for February*.

SITTING, OR SETTING?

CLIP the following from a recent number of one of our leading agricultural journals: "ICE FOR SITTING HENS. —J. E. Smith, Durham, N. H., states that he has cured an obstinate hen of a desire for 'setting' by putting several lumps of ice in her nest." Evidently the word *setting* is that used by Mr. Smith, while the word of the editor's choice is *sitting*. Common people generally agree with the former in saying "A *setting* hen." "The hen wants to *set*," etc.; while editors and correspondents of agricultural papers who affect correctness of speech use *sitting* and *sit* instead. We have two words in English that are spelt and pronounced *set*; the one a transitive, the other an intransitive verb. The general meaning of the former is to place, to locate, to fix; that of the latter, to settle down, to become fixed, as when we speak of "The *setting* sun," or say "The stars rise and *set*," "The dog *sets* well." It is in this sense of settling herself down, seeking a state of repose and fixedness, that the word is properly used in reference to a hen that manifests a desire to continue on her nest. A sitting hen is not necessarily a setting hen. The former is one that for the time is in a sitting posture, and may not be a setting hen at all. The latter is one that, having ceased to lay, is inclined to remain or does remain for several days or weeks longer on her nest, leaving it only at long intervals for a few moments at a time. When she is observed and spoken of as a setting hen, instead of sitting, she may be walking about the yard, clucking, and picking up something to eat. The distinction is an old and just one, and should not be destroyed. It is perfectly proper, of course, to speak of hens as "sitting on eggs," as of their "sitting on a perch." But, in speaking of their character or habit as incubators, we should say "setting hens," not "sitting hens;" "non-setters," not "non-sitters." Also, a "setting," not a "sitting" of eggs.

S. W. W.

SUMMER SCHOOL OF NATURAL HISTORY.

MR. JOHN ANDERSON has given his summer residence, Penikese Island, to Prof. Agassiz as a permanent location for the Summer School of Natural History, which he intends to establish in connection with the Museum of Comparative Zoölogy at Cambridge. Penikese is one of the Elizabeth group situated at the entrance of Buzzard's Bay, and is especially suited for such a school, being secluded and yet easy of access. Its area is about 100 acres of very fertile land, estimated to be worth \$100,000. In addition to this Mr. Anderson has given \$50,000 in cash, as a nucleus for an endowment fund to be devoted to the support of the school. The Museum has already received from the State of Massachusetts \$215,000, and will probably be given \$50,000 more by the Legislature during its present session. The Summer School will open in July with about 50 pupils of both sexes, who must be teachers or persons fitting themselves for such. No charge will be made for tuition. Every one who is interested in the studies and investigations of Prof. Agassiz must be gratified at this munificent gift by Mr. Anderson, not only as increasing facilities for scientific investigation, but as being also a well merited recognition of Prof. Agassiz's unselfish labors.

 PIGEON ENGLISH.

“PIDGIN”—or, as it is sometimes spelled, “pigeon”—English originated at Canton during the early days of the English relations with China, when the East India Company monopolized the trade with the Hong merchants. In their intercourse neither took the trouble to learn the language of the other properly, but confined their conversation to the fewest number of English and Chinese words necessary for bargaining and dealing in their merchandise. Hence the greater portion of this *patois* is made up of words used in commerce, and its incongruous appellation is a corruption of the word “business.” At first, John Chinaman found this a difficult word to pronounce, rarely making a nearer approach than “bidjinish.” In time he softened it

down to "pidgin," which is now universally used by natives and foreigners, so that the title of this paper means literally "Business" English.

The following dialogue between a British resident at Shanghai and his personal servant, or "boy," as he is termed, will give the reader some idea of the incongruous manner in which English is distorted in defiance of Lindley Murray's grammar. The master, seated at his table, has rung the bell, and his servant enters.

PIGEON ENGLISH.

ENGLISH PROPER.

BOY. You makee ling?

Did you ring, sir?

MAS. Yes; sendee catchee one piecee tailor-man.

Yes; send for a tailor.

BOY. Just now hab got bottom side. He is below at present.

MAS. Showee he come top side. Tell him to come up.

Exit boy, and re-enter with tailor.

MAS. You belong tailor-man? Are you a tailor?

TAI. Es, sah, my belong tailor-man. Yes, sir; I am a tailor.

MAS. Belong what name? What is your name?

TAI. Any man callee my Stultz. They call me Stultz.

MAS. Foreigners talkee so fashion, how fashion that Chinaman talkee? The foreigners call you so, but what is your real Chinese name?

TAI. Po-hing. Po-hing.

MAS. My boy makee pay you what thing my makee wanchee: more better you go bottom side askee he. He makee pay you what thing. My boy will show you what I want done. You had better go down stairs, and he will show you the article.

BOY. What thing you wanchee? What do you want?

MAS. Showee he makee mend that more olo piecee coat, and spouse he can makee clean my thinkke more better. Tell him to mend that very old coat; and if he can clean it, so much the better.

BOY. Just now teefin hab leddy. Luncheon is ready.

MAS. Belong what time? Why, what time is it?

BOY. Wanchee one halp belong catchee that two. It wants half an hour to two o'clock.

MAS. What thing hab got? What have you?

BOY. Feesantec, colo loso beefo, cully. Pheasant, cold roast beef, curry.

MAS. I go chop chop; pay he allo man no makee wait. I'll go directly; tell them all not to wait.—*To-Day.*

CORRESPONDENCE.

TAHLEQUAH, C. N., *March 8, 1873.*

MR. EDITOR:—I have the honor to make the following statistical report of the Educational Department of the Cherokee Nation:

| | |
|--------------------------------------|-----------|
| Number inhabitants..... | 15,529 |
| Public Schools..... | 60 |
| Orphan Asylum | 1 |
| Amount invested..... | \$117,000 |
| for the benefit of this Institution. | |

We have \$75,000 invested with the U. S. Government to be used for the education of the indigent Cherokee children in addition to our present school fund. \$100,000 to be used for the deaf, dumb, blind and insane. One High School for the females. This will enable you to insert something in favor of the Cherokees.

Respectfully yours,

S. S. STEPHENS.

EDUCATIONAL INTELLIGENCE.

DISTRICT OF COLUMBIA.—WASHINGTON.—The Committee on the Annual Report appeal to Congress for an allowance from the treasury, and it seems to us that the request is reasonable. Public lands are granted with no sparing hand to the schools of the States, but the seat of government is neglected. This is the more to be deplored, because foreigners desiring to study our common school system naturally seek to find it in perfection at the capital. Notwithstanding the disadvantages under which the schools of the District of Columbia labor, they show commendable progress. The white school population, those between the ages of six and seventeen years, numbers 17,403, and of these 14,468 attend school. 138 teachers are employed, and during the past year \$166,083.08 has been expended for school purposes.

KANSAS.—Number of teachers employed 3,795. The average monthly salary of gentlemen is \$40.20, while ladies receive only \$31.50; and yet the latter undoubtedly do as thorough work as the former. The average time school has been taught is 5.4 months. \$3,124,390.09 is the estimated value of school property in the State. The year closes with a surplus in the treasury of \$220,669.90.

KENTUCKY.—There has been an evident increase of educational activity during the last year. Of the 5,381 schools in the Commonwealth, 5,308 have been taught. The total number of pupil children reported is 416,763—an increase of 10,923.

Many more Teachers' Institutes have been held than ever before. General Institutes were held in each of the Congressional Districts—several of which were largely attended, and abounded in profit to those present; and the annual meeting of the State Teachers' Association was of unusual interest. The reports of the Commissioners are cheering. The schools of Kentucky during the year ending June 30th, 1872, have made gratifying progress.

An unprecedented number of the schools this year were half or entirely taught out by the 10th of January. This created such a "run" upon the Treasury, that the school exchequer became exhausted, and numbers of matured claims had to lie over until the sheriffs should reinforce the depleted Treasury. The law for the collection of taxes allows the sheriffs until the first day of April to pay the revenue, general and school, into the Treasury, while the school laws make the 10th of January the day for disbursing the larger amount for school purposes. Certainly, there is lack of fiscal harmony in these two provisions, and some plan should be adopted to prevent the discord and discontent occasioned thereby. Suspension of payment is demoralizing to any institution. It creates distrust, which the ignorant too often lay upon the shoulders of innocent officials. It is productive of embarrassment to a class of men who have reposed implicit confidence in the State, and faithfully worked in the public interest.

The State Teachers' Association was held in Frankfort August 12th to 16th, inclusive, and was attended by many

of the most accomplished educators in the State. The exercises were of a higher character than formerly. It is to be regretted that the Association has no means for publishing its minutes. Many of the papers read and lectures delivered before that body would prove exceedingly profitable if they could be given wide circulation.

MINNESOTA.—There has been no radical change in the work of the schools within the past year. The present system, as yet imperfectly developed, owing mainly to the youth of the State, is gradually unfolding itself, and as more tangible results follow, errors are corrected, improvements made, and a better confidence established.

| | |
|---|---------|
| Whole number of persons in the State between 5 and 21 years of age in 1871..... | 168,745 |
| Whole number of persons in the State between 5 and 21 years of age in 1872..... | 180,020 |
| Increase for the year..... | 11,275 |
| Whole number of different persons attending school in 1871.. | 113,983 |
| Whole number of different persons attending school in 1872.. | 120,352 |
| Increase for the year..... | 6,369 |
| Whole number not attending school in 1871..... | 53,480 |
| Whole number not attending school in 1872..... | 59,668 |
| Increase for the year..... | 6,188 |

NEW YORK.—**NEW YORK CITY.**—The New York Board of Public Instruction held its last meeting on Wednesday, April 2d. After the regular business had been disposed of, resolutions of thanks to the President, Dr. Holland, and to other members of the Board, were adopted. In closing, Dr. Holland said :

“ Before we separate, I have a few words to say. I have received from you, gentlemen, since I have been associated with you in the labors of this Board, nothing but the utmost kindness and courtesy, and for these, as well as for this latest expression of kindness to me, I return my hearty thanks. I am sure that all of us will go out feeling that, so far as we have known, we have done our duty, and done it faithfully. We have been restricted for money and restricted in the time we could devote to our work. Perhaps we have made some mistakes—indeed, it would be strange if we had not—but those who are to come after us can make more and worse mistakes, and still be entitled to the thanks and gratitude of the citizens of New York.

“ I welcome them to their work, and I bid you, gentlemen, a very hearty—nay, a brotherly—farewell. [Applause.]”

The Board then adjourned *sine die*.

The members of the new Board of Education met in the Mayor's Office at noon on Wednesday the 2d inst., and drew for long and short terms, with the following result :

| | | | |
|------------------------|------|------------------------|------|
| Jacob D. Vermilye..... | 1875 | Eugene Kelly..... | 1874 |
| J. Crosby Brown..... | 1875 | H. P. West..... | 1875 |
| Robert Hoe..... | 1874 | R. A. Whitthaus ... | 1875 |
| James W. Farr..... | 1874 | A. J. Mathewson..... | 1874 |
| William Dowd..... | 1876 | S. J. Patterson..... | 1876 |
| Albert Klamroth..... | 1874 | James M. Halsted..... | 1874 |
| Joseph Seligman..... | 1876 | C. V. Lewis..... | 1876 |
| Wm. H. Neilson..... | 1875 | David Wetmore..... | 1875 |
| Albon P. Man..... | 1876 | R. W. Townsend..... | 1876 |
| R. G. Beardslee..... | 1874 | Edward O. Jenkins..... | 1876 |
| James Cushing, Jr..... | 1875 | | |

It is probable that Mr. Neilson will be elected President of the new Board, and Mr. F. B. Wagner, Clerk.

TROY.—The students at the Rensselaer Polytechnic Institute number 175, of whom twenty-four will graduate this year. This college increases yearly in prosperity, but as yet it has only two buildings. The Main Building is a substantial and imposing structure, 115 feet in length, fifty feet in width, and four stories in height. It contains full suites of Recitation, Lecture, and Drawing Rooms, the Cabinets of Natural History and Metallurgy, the Library, and the Quarters for the Janitor. The rooms are spacious, conveniently arranged, and well lighted and ventilated.

The Winslow Laboratory is a beautiful structure, sixty feet in length, forty feet in width, and three stories in height. It was thus named in honor of John F. Winslow, Esq., of Poughkeepsie, N. Y., the former President of the Institute. The first story contains the Metallurgical Laboratory. The second and third stories contain the Chemical Laboratory and Lecture Room, both of which are fitted up in the most approved manner for complete Courses in General and Analytical Chemistry.

The site selected for the Institute Buildings, on the eastern slope of the city, at the head of Broadway, combines the advantages of a commanding position, and quiet surroundings, with great convenience of access.

UTICA.—The city now owns sixteen substantial brick school-houses, all in the main in good repair ; and each surrounded by ample play-grounds, well fenced, shaded and supplied with appropriate outbuildings. The total value of the school-houses and sites is \$236,820.00, and total value of all school property owned by the city is \$303,564.82, being an increase of \$182,564.82 during the past five years.

The total amount of money expended for school purposes during the school year ending October 1st, 1872, was \$53,726.41.

The number of pupils enrolled during the past year was 4,262, showing an increase of 786 in five years. The per cent. of daily attendance of the whole number enrolled was 64 $\frac{1}{4}$. The per cent. of the number belonging, 95. The number of teachers employed, including those in the Evening School, was 75. The number of cases of tardiness during the year was 92,243, being 329 less than last year, yet still quite too large. Only forty-one suspensions occurred during the past year—a decrease of over one-half on the number reported the previous year, with a corresponding increase in the good order of the several schools.

OHIO.—CINCINNATI.—The Wesleyan College was founded in 1842, and continued in successful operation until 1866, at which time three hundred and sixty-five young women had received its honors at graduation. The new structure was not made ready for use until September 30, 1868, at which time the College reopened. For the four years since the reopening, an average of two hundred and thirty pupils have been in attendance each year.

RIHODE ISLAND.—In this State, as in almost every other, the question of compulsory education is receiving increased attention. Among superintendents the opinion is general, that there should be some legislation to compel every child to attend school. In Rhode Island the number of absentees amounts to 4,200. The whole number of population between the ages of five and fifteen years, is 42,000. The average attendance at Winter schools was 28,702, while at Summer schools it was only 21,805. The total receipts during the past year were \$496,906.41, and the expenditures

amounted to \$465,623.63. The first year's history of the State Normal School has been one of successful labor, and has clearly proved the wisdom of its establishment. At the opening of the school in September, 1871, the number of applicants for admission was larger than the best accommodations, then furnished, could supply; and at the commencement of the second school year, the Board have found it necessary to enlarge the sitting capacity of the school, to receive the large class which sought admission. This gives cause for congratulation, from the fact that the number which seek for Normal instruction is undiminished, and also from the fact that such confidence has already been established in the public mind, with reference to the excellent working of the school.

VERMONT.—Number of persons between the ages of five and fifteen years, 53,714. Number of school-houses 2,402. Number of male teachers 684, of females 3,467. Very full statistics are given in the last report. We learn for example that 211 districts own "Webster's Unabridged," 293 own globes, 217 school-houses have clocks, while only 75 are provided with thermometers. These statistics are for 1871, the report being biennial. In '72 the number of children between five and fifteen years of age had increased to 59,999. Number of common schools 2,503; an increase of 101. There is a decrease of 13 in the number of male teachers, and an increase of 77 female teachers. In '72 1,313 teachers "boarded around," a decrease of 20 since the previous year. In the matter of dictionaries and thermometers there is a decided falling off. \$85,724.99 were expended for new school buildings in '72, and the estimated value of the school property is \$1,265,387.

WISCONSIN.—The total population between the ages of four and twenty years is 423,717. Of these 270,292 attended public schools, and 22,051 were cared for in private institutions. The large number of absentees in this State, 131,374, is partly accounted for by the wide range of the legal school age, from four to twenty years. In cities the average wages of male teachers have decreased from \$1,053 to \$982, while those of female teachers have increased from

\$367 to \$376. There is a growing disposition to retain those ladies who give satisfaction in the schools, and to advance their wages with increase of experience. The number of good school-houses increases every year.

CURRENT PUBLICATIONS.

THE ADDRESSES AND JOURNAL OF PROCEEDINGS OF THE NATIONAL EDUCATIONAL ASSOCIATION, 1872, is a volume which will be heartily welcomed by teachers and those interested in education. The subjects, which cover a wide range, were assigned to persons who were fitted by previous study or experience to discuss them intelligently, and as teachers, better than any others, know the defects and needs of our school system, the questions selected were practical ones and the speeches on them were to the point. Where so much is good it may seem invidious to particularize, but we would like to call attention to the paper on Compulsory School Attendance, by Hon. Newton Bateman, of Illinois. He remarks very justly that a certain degree of odium attaches to the question because of the form under which it is expressed, "Compulsory Education," as if the laws were to be directed against children, while the fact is that legislation is required rather to secure to children the *right* of instruction. Those best informed as to the working of our common-school system regard this failure to instruct all children as its greatest defect, and earnestly seek for means to remedy it. The public mind has not as yet been very generally drawn to the consideration of this question, but speeches like that of Mr. Bateman will awaken interest in it. There are many other interesting discussions in this book, which we heartily commend to teachers and to the public in general. The price is \$1.75 post-paid. Address S. H. White, Peoria, Ill.

MR. ARMOR'S "Lives of the Governors of Pennsylvania" *

* LIVES OF THE GOVERNORS OF PENNSYLVANIA from 1609 to 1872, by William C. Armor. Philadelphia: James K. Simen. 1873.

is a work of real value as a contribution to our Biographical literature. Such a work requires long and patient research, often the comparison and reconciliation of conflicting dates, and that careful equipoise in the narrative which will render exact justice to the views of differing parties, even while the policies which divide them are still matters of public discussion. We have no heart, in a work of such labor, to descend to any petty criticisms of style or expression, and in this case there is little need of them, for the work is exceptionally well written. We can only regret that we have not a similar volume containing the history of the Governors of the Empire State.

"Monroe's Third Reader" (COWPERTHWAIT & CO.) is one of the most sensible little books we have seen in a long time. It is a neat volume, printed in clear type and well illustrated. The selections are fresh and interesting.

"Apgars' Geographical Drawing Book" (COWPERTHWAIT & CO.) will prove an assistance in fixing in the memory the shapes of countries. The system of curves for showing the height of mountains is quite good.

WILLIAM E. GRIFFIS, A.M., Professor of Chemistry and Physics in the Imperial College at Yedo, has prepared the "New Japan Pictorial Primer," which is introductory to a series of New Japan Readers. It is a good book, well illustrated and printed. We must, however, object to Mr. Griffis giving the Japanese false ideas regarding a city stage (p. 33). "Two horses draw it and it goes very fast." Imagine a Japanese getting into a stage and expecting to go "very fast." He would certainly think that his pictorial primer had fooled him. He might come to the same conclusion were he to imitate the little girl (p. 28) who "holds a crab in her left hand." He might better follow the example of "Tip" (p. 13), a sensible dog who is 'evidently afraid of being pinched by his crab.

To use "La Grammaire en Action" (J. B. LIPPINCOTT & Co.) presupposes quite a thorough knowledge of French. The Lady of Lyons is not an easy play to translate, but a great deal of help is given by the excellent rules and vocabu-

lary which this book contains. The rules are of course quite meagre, but they answer their end, which is, not so much to instruct beginners as to refresh the memory of those who have grown rusty in the grammar. Especially valuable is the list of irregular verbs, those stumbling blocks which well-nigh drive pupils to despair. A few letters to be answered in French end this work. It will undoubtedly prove very acceptable to students of French.

"OWEN'S College Junior Course of Chemistry" (MACMILLAN & CO.) is admirably fitted for use as a text-book. The subject-matter has been carefully compiled, and, while the minutiae of different processes are not entered into, an outline is given sufficiently complete to make the addition of details by the teacher an easy matter. From the same house we have received "Words and Places," a very interesting and instructive book by Rev. Isaac Taylor. It is a pity that both these publications are disfigured by Macmillan & Co.'s catalogue, 94 pages in length, at the back of the book.

THE Students' Series of Messrs. HARPER & BROTHERS has received a valuable addition in "Hallam's Constitutional History of England," a work too well known to need further commendation. The volume now presented to the public is of convenient size and is handsomely printed.

SANTO DOMINGO is comparatively an unknown land to us, because for many years it has exercised no influence in a political or commercial way. Now, however, that there is a prospect of establishing trade between that island and the United States, everything throwing light on the history and characteristics of the Dominicans will be read with interest. Mr. Hazard's "Santo Doming, Past and Present" (HARPER & BROTHERS) gives a great deal of information in a pleasant, readable way. The style is however far from classical, it becomes objectionable occasionally. For example: the author speaks of one individual as a "mahogany-colored, bald-headed, spectacled, wiry old cuss." However vivid the description may be it certainly is not elegant. This volume belongs to a class which may be called journalistic histories, fact and anecdote combined in an agreeable manner. From

the same house we have received "Nicholas Nickelby," (Household Edition) "Middlemarch," "Robin Gray" and "A Passion in Tatters."

THE fact that "Thornton Hall" is published by A. D. F. RANDOLPH & CO. is sufficient guarantee that the book is a good one.

RECEIVED from SCRIBNER, ARMSTRONG & CO., "History of the Reformation," by G. P. Fisher, D.D., an impartial history published in Scribner's best style.

MISCELLANEA.

DR. DAVID MURRAY, for ten years professor of mathematics in Rutgers College, has been appointed by the Japanese government to organize their new system of public instruction. The progressive party in Japan seem resolved to cut away altogether from their old civilization and start on a new course, and they realize the importance of efficient leaders. Failing to find them in their own country they come to ours, and now many Americans hold responsible positions in Japan. Among all the good appointments, none, we are sure, will prove more fortunate than that of Dr. Murray. A Christian gentleman, of large experience, and possessing great executive ability, he is admirably adapted for the position and will be a worthy representative of America in Japan. While we are sorry that Rutgers is to be deprived of his services, we are glad to know that he will have an opportunity of exercising his powers for the benefit of a nation. The appointment was a surprise to the public, inasmuch as Dr. Murray did not seek it, and because it was asserted on the best authority that Hon. B. G. Northrop, Secretary of the Board of Education of Connecticut, had already accepted the position. This was however a mistake, the commission having never been offered him. Dr. Murray leaves in May, expecting to remain in Japan for two years.

DIFFERENT ALPHABETS.—The Sandwich Island has twelve letters; the Burmese, nineteen; the Italian, twenty; the Bengalese, twenty-one; the Hebrew, Syriac, Chaldee, Samaritan and Latin, twenty-two each; the French, twenty-three; the Greek, twenty-four; the German and Dutch, twenty-six each; the Spanish and Slavonic, twenty-seven each; the Arabic, twenty-eight; the Persian and Coptic, thirty-two; the Georgian, thirty-five; the Armenian, thirty-eight; the Russian, forty-one; the Muscovite, forty-three; the Sanscrit and Japanese, fifty each; the Ethiopic and Tartarian, two hundred and two each.

POPULATION OF THE GLOBE.—There are on the globe 1,288,000,000 souls, of which 360,000,000 are Caucasians; 522,000,000 are Mongolians; 190,000,000 are Ethiopians; 176,000,000 are Malayans; 1,000,000 are Indo-Americans. There are 8,642 languages spoken, and 1,000 religions. The yearly mortality of the globe is 42,043,000 persons. That is at the rate of 115,200 per day, 4,800 per hour, 80 per minute. Among 10,000 persons, one arrives at the age of 100; one in 500 attains the age of 80; one in a 100 to the age of 70. In 100 persons, 95 marry.

CONSTANTINOPLE has forty-three newspapers, of which nineteen appear daily. Of the latter five are Turkish, four French, two English, five Armenian, and three Greek.

INCLUDING VIENNA, Germany now reckons eight geographical societies. That of Vienna has a membership of about 500; Munich, 400; Berlin, 380; Dresden, 270; Leipzig, 250; Frankfort-on-the-Main, 150; Kiel, 100; Darmstadt, 80.

SENSATION IN THE MOUSE'S EAR.—Dr. Schobl, of Prague, has made the distribution of nerves to the ear of the mouse a subject of special examination, and calls attention to the fabulous richness of this organ in nerves, the bat's wing being in comparison but poorly supplied. The ear of a mouse of ordinary size presents, on an average, six thousand nerve terminations, or, for both ears, twelve thousand. The function of this elaborate development is probably, as in the case of the bat's wing, to enable the animal to guide its way through dark, narrow passages.

AMERICAN EDUCATIONAL MONTHLY.

JUNE, 1873.

ART AS AN OCCUPATION FOR WOMEN.

IN speaking about the suitability of art study as a training for women, and its practical value as fitting them for the serious duties of life, by which in any event they make themselves independent members of society, I am conscious that I touch on a subject upon which there is much difference of opinion at least, and latterly much controversy. In view of this, and only recognizing the difference of muscular strength in the sexes, existing for obvious reasons, and which according to every natural law must be compensated for by some special endowment not possessed by the muscularly strong, (or Nature has been less just to her last creation than to all others), I judge from my own experience that the whole subject is one of great interest, and that the compensation referred to takes the form physically of a more delicate organization, and mentally of a greater sensitiveness to outward influences. Theories seem to me to be fairly deducible from practice, by those who may have no claim to be philosophers, or who do not possess the original faculty of inductive reasoning; always supposing that those who practise have sufficiently long and extensive practice, and seek rather to discover a principle for their own guidance than to establish a theory preconceived or borrowed from others. My own fear has been,

and now is, that hitherto women have been treated as pets and playthings, to be indulged and delighted in, but not to be held responsible for any thing; have been educated with the view that all should become merely the ornaments of society and not its essentials, and the important half of its structure; that, finally, men have come to regard women with a patronizing feeling, in which there is an infinite amount of good nature in some cases, but no justice in any case. And the terrible thing is, that, when the good nature ceases, or the indulgence necessary to a plaything comes to an end, all the penalties fall on one side only: the whole of the sauce is used up for the goose, whilst the gander stalks away to new fields that are ever verdant and fresh, and indulges his gandorial magnificence.

Christianity and May meetings ought to have had long enough opportunities in nearly nineteen hundred years to test the fairness and justice of this view of human nature; but they seem to me to have failed to discover, that, whatever difference our beneficent Creator meant to exist in his design of human beings, he usually places there with his own Almighty hand, and requires no further journeyman's work on man's part to emphasize or stamp this difference. Yet, in spite of this, we educate women superficially, and then smugly say they have no minds; we withhold all reasoning processes from them, and then say they cannot argue, but jump at conclusions; we train and grind up our boys in athletic sports, in Euclid and conic sections, and the differential calculus, and our girls in Berlin-wool work, in waltz-playing, and the Parish fashions, and then proclaim that men can reason, women only perceive, men can create, women only appreciate; and as Milton the puritan poet expresses it,—

“ For contemplation he, and valor formed ; *
For softness she, and sweet attractive grace,”—

as though contemplation were not equally characteristic of both sexes, the combination of leisure, a stored mind, and subject to contemplate; valor, the result of self-confidence in training, and difficulties already overcome, and faith in

* Not trained.

surmounting future difficulties ; softness and sweet attractive grace, the natural appreciation of each sex by the other, as much belonging to men as to women, common to the two sexes, which are alternately the attracted and the attractive.

My own belief is, that we have no grounds for and no right in making any difference whatsoever in human beings on account of sex, either in their education or occupations, more than Nature has done ; and that half of the troubles we find in the world arise from, and are a just judgment upon, our presumption in making any distinction between them, in fostering the self-conceit of the one, and sacrificing the independence of the other. Let the same education from the first to the last, physical and mental, be furnished for both sexes ; let it be accepted, that, as they require the same physical sustenance, so they will need the same intellectual food ; that the two who will in time become one flesh shall be in unison and harmony with each other, in attainments and desires, in their minds as well as their bodies, and then we shall have the perfect harmony in difference, which we see in all God's works, leaving it humbly to him that all His plans shall develop themselves with as much certainty as that He creates each after its kind, without any impertinent help from us. The compensation which it appears to me Nature makes to women for the comparative withholding of muscular strength, is endowing them with greater powers of endurance in the first place, and a gift of natural aptitude and quickness, which, when it exists in men, we call mother-wit. Thus we see that whilst men become irritated and impatient of the repetition of little troubles, and would put a violent end to them, women, like charity, are long-suffering and kind over vexations, which in connection with their children and other cares often last daily for years. The quickness and aptitude they have may be the support which Nature gives them through their instincts, as a balance to men's muscular superiority ; and this seems to me to indicate that the sensitive touch and quick perception and delicate hand point out the practice of art as peculiarly adapted for a woman's occupation, being in itself the most refined and delicate of all manual labor, as it is also

the most perfect expression of the impressions we receive through our eyes, of physical phenomena.

It may be, that, should we recognize this view, the division of labor, which somehow or other must be made will be facilitated, and both sexes profit by it. If we remove all masculine protective tariffs, we may find greater powers where we have fancied that weakness was inevitable. In literature, we have some of the most powerful works of the imagination written by women; and they fetch the same price in the book market as the novels which men have written. In the picture exhibition, the buyer decides a work of art in relation to its price, not with reference to the sex of the painter; and those who are familiar with the London exhibitions know that as large a proportion of the works displayed in the exhibition of the Society of male Artists are sold as in any other exhibition composed principally of the works of men. That, however, is the case with books and pictures only, where women sell their labor at their own time, and choose the purchasers, being proprietors of their own skill. In every other avocation that we know, the same work, performed in the same manner, with equal skill, is paid for at an entirely different rate for the two sexes. This is especially the case in education, whose influence on the happiness and safety of the human race cannot be overrated, that, of those who are employed to train up our children in the paths of rectitude and morality, nine-tenths of them are paid for their labor about half the price they would receive if they were men. An unfortunate example to them of how they should teach rectitude and instil moral principles.

If a woman and a man were by their industry to raise ten barrels of potatoes, and each took a barrel to the market, the market price of a barrel of potatoes would be given for both for their goods. If a woman and a man by their industry and training grow the ability to teach, and take their goods to sell in the educational market, both being of the same quality, tried by every test, the man will be paid by the purchaser nearly fifty per cent more than the woman, and the latter is of necessity obliged to take the unrighteous offer. That is to say, when we are buying food for

bodies, or to fatten our hogs, we do fairly to all who have to sell; when we purchase intellectual sustenance, to educate and develop our children, we pay those who have education to sell, if they are women, at fifty per cent less price than we should pay them if we were buying potatoes of them for our swine.

The minds and souls of our children seem to me to be of as much importance as their bodies, and even as the bodies of any other animals; but here, in comparison, by an act of injustice, we undervalue them about fifty per cent. If women supply us with only half as good an article as men, we do an injustice to our children by employing them; if the article supplied by women is as good as that supplied by men, we rob them of every dollar we should pay men for it, but don't pay to women.

So that, in the educational labor market generally, we act inconsistently, and inflict penalties upon those from whom we require the most exalted service. This cannot be for the public good, but proceeds from the limitation of occupations suitable to women, resulting from their utterly unpractical education, which throws almost all women of the middle class who are without means into the educational market. By this, individual labor is reduced in value, the market being glutted. The purchaser, therefore, goes in and buys up what he wants at half-price, the needy seller sacrificing it, on the principle that half a loaf is better than no bread. This is the explanation of a condition of things, which is, from the public point of view, utterly suicidal economically, and the root of many evils morally. We have drifted helplessly, but, I trust, not yet hopelessly, into social circumstances, by which the intellectual powers of half of the human kind are left dormant, and remain stunted and undeveloped; so much so, that but a very limited number of occupations are possible to women, and of these, from our worship of a fetich called Mrs. Grundy, many are deemed unsuitable. Yet Nature goes on laughing at the little golden calf that we have set up, and bringing into the world more women than men, whose minds and actions we deliberately cramp more than John Chinaman does the foot of his female minister, who is so much his mere chattel as to be

drowned by him, or sold to his neighbor, to suit his own convenience, without interference by the law. * * * *

I am aware that for this deplorable condition of things no one is directly to blame, and that men are sometimes very hardly judged by women as being wholly responsible for it. We have drifted into it, having set too much store by that Eastern estimate of women we originally received from the Jews, and might as well have adhered to burnt-offerings, peace-offerings, and sacrifices, as to still keep up the senseless distinctions of sex which came to us from the land of harems and fatalism. It is time to wake up from our delusion on this matter,—time for men to reject with the scorn and contempt it deserves the masculine and feminine chirruping of those who accuse women-helpers of a desire to unsex them, as though that were possible. Here we see women of ability and power running off into all kinds of lamentable delusions, and inventing pestilent doctrines concerning their relationship to men, all for the want of sound practical education, good, healthy work, and fair treatment; and yet we fold our hands, and stand idly by, horrified at the phantom our neglect has called up, instead of remedying it by the only possible specific,—work and wages, and plenty of both. We ought to clear away the fanatical cobwebs in women's brains,—engendered by superficial education, by their sense of unjust treatment, and partly by enforced idleness,—with a vigorous blast of wholesome labor in any capacity or occupation they choose themselves, or can do the best at: and let us once for all try and learn the truth, that sin and labor are of no sex, and that any professional or manual occupation a decent woman could not worthily be employed in, a decent man has no right to engage upon; whilst every employment that is necessary and honorable is as much so to one sex as to the other, the fitness of each for any occupation being controlled only by their physical powers. This, I maintain, is not a sentimental view. It is, for aught I know, the view of many besides myself; though having never had time to read either book or pamphlet on the woman's-rights question, I may be advancing very old arguments: but this does not affect the rightness or wrongness of my own judgment, inasmuch as these conclusions have been arrived at independently, by

practical observation extending over many years, during which time I have been a daily educator of adult women, and thus know something of their wants and their powers. Experiments for educating women and men together are familiar to me ; and so also is the strict separation of the sexes educationally. The former, in every case coming within my observation, has been beneficial to both ; and the latter as detrimental. For this reason I would as strongly oppose colleges and universities for women only as for men only, each being but half the story ; and the next great act of justice and wisdom which the just and wise should be called upon to perform is opening all the universities and schools and colleges to women, in which they may acquire the educational basis of all the professions. The dangers which sage people with telescopic minds decry in the distance, when "sweet girl graduates" are placed in daily association with their graduating brethren, is a danger which is existing in their own households, at their neighbors' hearthstones, in their own churches, and in all social assemblies every day, without destroying them. If it be true that young men and women cannot meet on the same staircase, listen to the same lectures, and study the same subjects together, without disrespectful treatment of one another, and without influencing each other badly, it is something exactly contrary to my experience for twenty years : but, if it is really the case, the sooner they are taught to do so by actual experience, the better for every one concerned. It is a scandal and disgrace to the nineteenth century, if it be so.

I have dwelt more fully upon this topic than I should have felt warranted in doing, but for the fact that art study especially (in which knowledge of the human form is an essential to success in the highest branches) is one of the subjects which Mrs. Grundy has her opinions about, and darkly hints at the shocking things which sometimes happen, when women take to studying art, anatomy, and other fearful subjects, that ladies of delicate perceptions should never think about. That kind of grundyism must be wiped out ; and I know no better way of doing it than by proving or making all such studies so pure and morally harmless that the purest-minded woman can study them without any

shock to her most delicate perceptions, and with much profit to her knowledge, and carry on her studies side by side with her masculine fellow-students. If there be any apples on the tree of knowledge which Eve must neither touch nor taste, I think, on the whole, Adam will be better without them; and history, if it sets a precedent at all, records at least one instance where the same fruit was forbidden to both,—not to one only.

It is some comfort to know that many of the preserves of knowledge have been successfully besieged by women, and that colleges of surgeons and physicians, and academies of arts, whether royal or republican, are surrendering unconditionally to the demands of lady students for admission and degrees. In this crusade, men have taken the sorry part of obstructives, helped and encouraged thereto by the cackling of some women who profess in such matters to be anxious only for the happiness of their own sex, but who, if they had ever faced the difficulties of providing for themselves, might very quickly find good grounds for changing their opinions. Remembering, too, the indescribable amount of influence which women have upon their children, I cannot imagine it possible to over-educate them; for every word and thought they utter is unconsciously shaping the minds and lives of their children, whilst yet of tender age; and when we consider how almost invariable it has been, that the great men of all ages have owed their first inspirations and their habits of thought to their mothers, whose superiority to other women has been that of a higher education, it would appear to be established, that, whatever it may be necessary to teach to men in this world, it is a matter of necessity to teach to women, in order that the man's education may begin with his life, and his mind be nurtured with his body, that perfect human education may be accomplished.—*Walter Smith, in Art Education.*

IN SCOTLAND, one young man to every thousand of the population goes to college; in Germany, one to every 2600; in England, one to every 5800.

BUSINESS COLLEGES IN AMERICA.

THE question of practical education is receiving at present a great share of the attention of the best minds of this country and Europe; and not only are our highest seats of learning finding it necessary to give elective courses of study, and especially to add to their departments of practical science, but independent technical schools are being established at home and abroad, and are meeting with the greatest success. In France, especially since the war, great attention is being given to the establishment of commercial schools; a number of such have been endowed by men of means, and by the government; and agents have been sent to this country to look at this feature of our educational system, and profit by what is seen.

A recent number of the *Revue des deux Mondes* contained an elaborate article on "Commercial Schools in France and Elsewhere," which was very full and exhaustive, but which failed to present the best features of American schools. The November number contains in response a letter from Prof. G. H. Gaulier, principal of the Department of Foreign Languages in Packard's Business College of this city, which we have had translated and publish herewith.

The Business Colleges of America have constituted an important feature in the educational system for the last thirty years, during which time they have constantly increased in number and importance. Classical education is somewhat at a discount here, for the reason that the brightest examples of success in acquiring wealth and position are of men not (according to the general sense of that term) liberally educated. Young men, ambitious to make a mark in the world, look around them and see that College graduates are not the men who are impressing themselves upon the world, and at once conclude that a collegiate education is not the necessary preparation for what they desire to achieve in life; and in order to meet the demands for some kind of preliminary training, Business Colleges, by claiming to give a practical direction to their teaching, and to satisfy the not unnatural desire of young

men to be considered as having received an education, in a great measure supply the place which would otherwise be filled by the College of higher classical culture; and, as these institutions have grown in importance and recognition, it has been found necessary, year by year, to cover a broader area of study, and through fidelity to the hopes which they excite, to furnish, in a generous sense, the means of a thorough practical education.

The Association of Business Colleges originating with Messrs. Bryant and Stratton, and reorganized under the title of "The International Business College Association," comprises the most extended and complete effort of this kind in the world. The association includes not less than forty separate and distinct institutions in the United States and Canada; having a representative in all the largest commercial cities on the continent, extending from Portland to San Francisco and from New Orleans to Montreal. This a co-working association in an important sense; although each school thereof is entirely independent as to its own management, and not one of them is dependent for its support upon anything but its real patronage. Some of the institutions in the association are, to be sure, working under State charters, but these charters are very loosely drawn, and leave the management, with very little supervision, in the hands of the real owners and proprietors.

The studies pursued in these Colleges are, first, Book-keeping in all its ramifications and applications, Commercial Law, as covering every phase of personal rights and business customs, Commercial Arithmetic, Commercial Correspondence, Political Economy, Civil Government, and, in several of the schools, the Modern Languages, particularly French, German and Spanish. In the New York College, the study of French is a very important feature, and arrangements are now being effected to extend the correspondence of this institution to England, Germany and France, with a view to mutual benefit, such as is derived from the intercommunication now established, as between the different Colleges of the association in this country.

The extent to which this correspondence is carried on may be appreciated from the fact that not less than one

nundred letters a day are received by the New York College from the nearer institutions, namely, Boston, Albany, Troy, Philadelphia, Trenton and Baltimore. These letters contain shipments of goods—representative merchandise in the shape of cards, with the kind and quantity of goods printed thereon—to be sold on account of the shipper and the consignee, or to fill orders of purchase from the person to whom shipped; also, account sales of consignments which have been sent and sold, with the returns in the way of drafts, checks or current money; and, in fact, embracing all the details, in every direction, characteristic of business correspondence and business transactions between leading houses in the large cities. This affords a most excellent opportunity for criticising the work of the student, and has the advantage of promoting wholesome competition between the students of the separate institutions, and in every way serves to quicken and liberalize the mind and to prepare the aspirant for that wider field of usefulness which awaits him.

There is no better way of giving an idea of the character and extent of the studies pursued in these colleges than by presenting, as briefly as possible, the daily operations of one in New York. The sessions are held five days of the week, commencing at nine in the morning and closing at two in the afternoon. The students—about three hundred of whom are in daily attendance—are expected to be prompt and regular, and are held strictly to an account for absences and violations of the regulations of the school. The first hour of the morning is devoted to lessons in writing, with the exception of about fifteen minutes given to the opening exercises, which consist of calling the roll, giving out the appointments of the day, brief lectures or hints from the professors, and sometimes readings and recitations by the students. Great stress is put upon writing—and, under the American system, with the careful instruction of intelligent teachers, it is astonishing to what perfection this art is brought. There is a severely practical character to the writing practiced in this College, which will compare favorably with the established styles of the best business houses anywhere. The institution has a constant and

increasing demand from merchants and others for clerks and accountants, owing principally to the fact that nowhere else can one be so sure of finding well-trained business writers.

In the College proper there are two departments, one the initiatory or theoretical, the other the advanced or practical. In the first department the theory of accounts is thoroughly taught, in a series of exercises adapted to that end, and presenting every phase and bearing of business affairs—of gains and losses, of adjustments between partners, and all the intricate questions and applications which are so apt to trouble the brain of a neophyte. In connection with the study of accounts in this department, the other branches, viz., Arithmetic, Commercial Law, Modern Languages, etc., are carried on *pari passu*. From three to six months are spent in these preliminary studies, when the student is advanced to the practical department. This department is simply a miniature business world. Very little teaching is done here. The student is supposed to have received his theoretical education, and to have entered upon business life, where his theories are to be put in practice. Should he fail in this application, it is an evidence that his theoretical training has been imperfect, and he is sometimes sent back to school to complete his education.

In the practical department he begins as a small merchant, is furnished with capital sufficient for his business, and is instructed generally how to proceed. The details of all his transactions he is expected to carry out himself. A thorough working bank is in operation, and he must negotiate his loans, make his collections, and keep his deposits therein. He conducts his business to its conclusion, declares gains or losses, closes up his books and holds his capital for some other department of trade. He thus goes on from one sort of trade to another, until he has covered the leading business enterprises of the country; he is then advanced to a position in a large jobbing or importing house, where he is made familiar with all the routine of purchasing from manufacturers, of receiving from foreign countries, of passing merchandise through the Custom House, and all the details requisite in real business.

He fills here all positions from the lowest to the highest, or manager's position. He is then advanced to the merchandise emporium or general agency, which holds the key to the entire workings of the business community, and gives a practical illustration of the laws of supply and demand. He has here an opportunity to study practically the questions of political economy through its working channels of operation. Here are illustrated all the phases of production, barter and consumption, and the laws which they set in motion. He passes regularly through the transportation office, where he gets a practical idea of the routes of travel, the rates of transportation, and the minute details and manipulations required; through the various kinds of commission and shipping houses and post-office; through the bank where all his previous knowledge is tested by the severest financial calculations and applications. He commences as runner, is advanced by regular gradations to the positions of collection clerk, bill clerk, discount clerk, receiving teller, paying teller, individual book-keeper, general book-keeper and cashier. The transactions in the bank are as complete and perfect as those in any actual working institution, as it is the financial agent of the entire business community—receiving deposits, paying out on checks, discounting paper, collecting paper, and regulating all financial matters, as between the students of the College where located and those of corresponding institutions. As the final test of his proficiency, he is put in charge of all the offices as general superintendent, and is made responsible for the entire workings of the community.

While in the practical department, which occupies from six to nine months, and often a year, the student is in constant correspondence with the students in co-working institutions of the other cities, as before intimated. The practical department bears the aspect of an industrious, thriving, ambitious business community; each student is, to all intents and purposes, a business man, and regards himself thus; he forgets that he is a mere pupil, but assumes and feels the dignity of his position, as one who is managing his own affairs. His attitude and conversation are business like—he has no thought of his transactions as being other

than real; and, for all purposes of training, the system is as thorough and severe as could be adopted in connection with real life.

As before remarked, the tendency of these institutions is toward a wider and more liberal culture, and as they are being more and more recognized and accepted as professional institutions, out of which young men pass into the actual duties of life, they are more and more encouraged to meet the just demand—and Business Colleges to-day are as far in advance of what they were ten years ago as it is easy to conceive.

The article in the *Revue des deux Mondes* on Commercial Schools in France and Elsewhere, has been highly appreciated here, both on account of the information it has given as to commercial schools in Europe, and for its broad and liberal views of what may be and will be done in the way of improvement. It has already been translated, and will assuredly do much good, as it is having a wide circulation.

GEO. H. GAULIER.

THE STRUCTURE OF THE APPALACHIAN ZONE.

PART SECOND.

THE Alleghany division extends properly from the axis of the Alleghany Mt. westward not less than two hundred miles, therefore including a considerable portion of the Ohio Valley, though probably the most disturbed portion is barely forty miles wide, the rest being to all intents and purposes a plain. The elevation along the main axis varies little. In Western Pennsylvania it is about twenty-seven hundred feet, in West Virginia it is twenty-six hundred and twenty at the crossing of the Baltimore and Ohio Railroad, two thousand near White Sulphur Springs, and twenty-six hundred and fifty feet at Peter's Mountain, while in Tennessee it rarely exceeds two thousand feet above sea-level. At the gap of Cheat River in Laurel Hill, the elevation of the hills is little less than two thousand feet. From Laurel Hill northwestwardly the descent is well-marked,

so that when we reach the Ohio river at Wheeling, we find the river hills reaching twelve hundred and eighty feet above tide-water. This is not the original height, as we ascertain farther west, where we find the hills rising to fifteen hundred feet. In these measurements, we take the hill-tops and not the river levels. Should we take the latter, we would be led into serious errors, as the rivers are local, flowing in deeply excavated channels, several hundred feet lower than the surrounding country. Thus at Wheeling the land lies really almost seven hundred feet above the river, and even the narrow "bottoms," as they are termed, the river terraces, are fifty feet above low water.

This great plateau, the northwestern side of the Alleghany Mountains, does not strike the observer as in any way resembling a plain. It certainly is very far from being level, and the scenery is so complicated by hill and dale that one is at a loss to describe it. Yet should one stand on the summit of any of the sharper hills in eastern Ohio, he cannot fail to notice that the summits of all such hills are in almost the same plane, and that those which fall below this plane have their tops rounded, as though they had been worn off. Even a superficial observer must inevitably conclude that at some time these hills were connected, that where valleys now exist was once filled up level with the hill-tops, and that some agent of wonderful power has removed the material which no longer appears. Such a conclusion is undoubtedly true. The hills bordering the Ohio are not true mountains, they are simply relics of a great plateau, which has been gashed by running water, by which the valleys have been formed, and an enormous amount of material has been carried away to form the alluvial plains, which border on the Ohio and Mississippi. Of the wondrous erosive power of water we shall speak more fully beyond.

On the map we see that the ranges composing the Appalachian chain are not straight, but that they stretch along in an apparently rude and lawless manner. A little examination, however, suffices to show us that this lawlessness is only apparent. There is a regularity in these irregularities, for they are common to all the ridges. Thus from Canada

to New York the trend of the whole chain is N. 15° E. and S. 15° W.; but from the Hudson River gap at the Highlands to the Lehigh River in Pennsylvania the course is no longer straight, for the whole chain sweeps round westwardly, giving a graceful curve, with its convexity directed southeastwardly. From the Lehigh River to Cumberland County, Pennsylvania, the course is straight, towards the west, but in the Juniata region, reaching to the northern border of Maryland, the chain is again curved, and deviates from its previous course 40° towards the east, giving a curve with its concavity directed southeastwardly. From that point to Randolph County, West Virginia, the trend is straight and southerly, but thence to the New River it is curved, the course being deflected to the west. In this section the mountains become very irregular, and the topography presents, on a large scale, the appearance of a short chopping sea. The width of the whole chain here is barely sixty miles. From New River to the mouth of Holston River in Tennessee, a distance of two hundred miles, the axes are straight, and have the direction N. 67° E. and S. 67° W. The width here is only fifty-five miles. From the mouth of Holston the chain curves eastwardly, suffering a deflection of 32° from its previous course until it approaches the mouth of Clinch River, where the course is once more changed, becoming straight. This direction is retained until at a short distance southwest from Tuscaloosa, in Alabama, the whole chain, which by this time has become exceedingly low and narrow, finally flattens out and disappears under the comparatively recent formations of middle Alabama.

In this examination of the physical structure of the Appalachians, we have found in going from east to west, these distinct mountain belts, the Blue Ridge, the Middle Mountain Belt, and the Alleghany plateau, separated by valleys of greater or less extent, while in following the series longitudinally we have found it divisible into nine sections, having alternately a curved and a straight course.

Looking at a mountain from a distance, one not careful in observing might conceive of it as simply an irregularity of the surface, an indiscriminate heaping up of material. But

not so. Mountains are not mere excrescences; they are not foreign, like a lump of clay or putty attached to an artificial globe. Their intimate structure shows that they were once but like the flattest plain, and that their present form is the result of mighty forces, upheaving the earth's crust. The land as seen by us to-day is believed by geologists to have accumulated gradually. Not indeed as some would have us say by gradual accretion from without, but only that the now existing land has previously existed at other localities on our globe. It has been transported by running water, or, dissolved in the sea, it has been precipitated through the agency of animal life, such as corals or mollusks, and thus placed in new positions. These operations go on now. The Ganges, Amazon and Mississippi on a great scale, as well as all smaller streams on a lesser scale, carry mud and other materials suspended, which from time to time they deposit, forming along their banks the fertile lands termed "bottoms," or transporting them to the sea where they aid in forming deltas and thus in adding to the land in such localities. Whenever additional land is formed in one place it is quite certain that land has been worn away somewhere else. Thus the Mississippi River is continually increasing its delta by depositing the material suspended in its water. But all this material has been carried from localities bordering on it or its tributaries. During a heavy rain-storm the soil is washed from the hill-side into the little streams, which thereby become muddy. In this condition the little streams reach the rivers, pouring into them this water turbid with soil. These in their turn, swollen by the influx of water, push on with speed greater than usual, carry the load of detritus until the current is checked by some means and then drop a portion of the load. The finer particles are carried to a much greater distance than those which are coarser. Thus it is that particles washed off the hills of northern Pennsylvania or from the upper waters of the Missouri, nearly three thousand miles above St. Louis, will eventually find their way to the Gulf of Mexico. Some matter is soluble in water. Thus common limestone, though but slightly soluble, may in course of time yield a vast quantity to the sea. This dissolved limestone in its turn affords

material out of which the corals construct their framework and the mollusks, or ordinary shell-fish, their shells. New supplies are brought from the land as rapidly as these animals abstract it from the sea-water.

Now such being the case, what condition would we find seaward from the shore where some mighty river like the Mississippi discharges with it enormous quantity of muddy water? In obedience to the law of gravity and the resisting force of the water, the gravel and coarser materials would be dropped first, then finer material, and last of all the finest particles or those which are impalpable. We would expect then to find the deposit near the shore comparatively coarse, made up principally of gravel and rolled pebbles: following this seaward we would find it gradually diminishing in coarseness as well as in thickness, until at length as the deposit thins out almost to nothing we find it consisting nearly entirely of the finest silt. Before reaching this line we find a new element appearing in the deposit, which soon occupies the horizon alone. This consists mainly of microscopic animals and their exuviae, mingled with the shells of mollusca, the results of organic life. Following the deposit beyond the influence of the turbid water we find it consisting entirely of these remains—a true limestone. If the sea be shallow and the climate favorable, we shall find the corals at work in this clear water and industriously contributing to the formation of limestone.

Now let the condition change. Let us have a subsidence of the sea-bottom, no unusual occurrence. The mouth of the river retreats inland, the turbid water reaches not so far as previously and the limestone formation is carried nearer the former coast-line. It passes over the silt previously deposited, and if the subsidence have been sufficient, it may even cover the sandstone of the old shore. Had the sea-bottom been elevated, the land deposit would have stretched farther into the former sea and have covered the limestone. In either case there would be no difficulty in distinguishing between the layers of limestone and muddy material. The difference would be well marked. If these depressions and elevations should alternate, there would be numerous layers, and in the nature of the case these layers •

or strata would be horizontal. This is no purely hypothetical case. We know that such subsidences are continually going on. We can even measure the rate at which New Jersey is disappearing, and can tell approximately how few hundreds of thousands of years will elapse before that State will be blotted out of the Book of Nations. We see these strata forming to-day at the mouths of our great rivers, and in their formation we see what has been going on in the past history of our globe. Knowing, as we do, that such strata or layers are deposited in a horizontal position, and that in the nature of the case they can be deposited in no other way, we are compelled to believe, if we find them bent or twisted or turned upon edge, that they have been displaced, that some force has been exerted to change this normal position after they were deposited.

The numerous gorges occurring in mountain ranges afford full opportunity for investigation of their internal structure. For an illustration of the structure of the Appalachian chain let us take the route of the Chesapeake and Ohio Railroad which crosses the whole chain in a line, affording perhaps the best exposure of the ridge as one series. The cuttings are deep and the hillsides are very steep and often bare. These cuttings and naked hillsides show us that the mountain is made up of layers as easily distinguishable as the individual books in a pile or as the rows of bricks in a wall. Here we have a vast bed of sandstone, made up of almost innumerable thin layers, upon this rests a slate stratum; still going west we find over the slates, clay beds, filled with shells, over these coarse sandstones with occasional leaves of ferns; still further west an enormous deposit of limestone more than one thousand feet thick, made up of many layers, differing in color and composition, some of them simply masses of shells packed together. Upon this limestone we find a strange alternation of sandstone, coal and limestone in layers varying from two feet to two hundred feet in thickness, and having a total depth of not less than three thousand five hundred feet. In every way save one, these strata resemble those forming now along our shore and under the sea. Save one, because they are not horizontal; they are all tilted or inclined to either the south-

east or north-west. In some localities they are set up on edge and in others they have been pushed over, their natural order is inverted, so that those strata which were originally on top are now underneath those formerly at the bottom. Here certainly is hopeless confusion. The tourist riding hastily along and glancing only now and then from the car-window is astonished at the conditions, and inevitably concludes that any attempt to discover order here would be worse than useless; he might consider it almost foolish. Yet not so. Nothing can be grander than the history revealed to us by a careful study of these phenomena. But let us see what the phenomena are. Watch attentively from your car-window and so study some one layer that you can identify it without difficulty at another locality. A few seconds will suffice for this. We will suppose that our examination begins in the Middle Mountain belt. When you first see your stratum it is inclined or, as geologists would say, it dips to the south-east. A few moments afterwards you find it dipping to the north-west or perhaps vertical. This alternation is repeated several times, and you at length conceive that there is a connection between these strata, in other words that the stratum is curved. Perhaps while you are thus considering, the train passes in full sight of some enormous rock-face completely denuded of soil, which shows a beautiful arching of the rocks and so confirms your supposition. But these curves vary much in character in the different mountain belts.



DURING the year 1872 gifts have been made by individuals for educational purposes, in the United States, as follows: for colleges and universities, \$6,282,461.63; for theological institutions, \$1,155,856.53; for schools of law, \$20,422.13; for agricultural and scientific schools, \$481,420.99; for female seminaries, \$689,993; for libraries and normal schools, \$1,020,000; for academies, \$306,040—being a total of \$9,956,194.28.

FEMALE EDUCATION IN RUSSIA.

CATHERINE the Great was the first Russian sovereign who took an interest in female education. In 1764 she established a school for girls in the Convent of the Resurrection, built by the Empress Elizabeth on the banks of the Nerva. Of the five hundred pupils who were admitted at the age of six, and graduated at eighteen, half were of the nobility, and half of the middle classes. The principal, Madam Lafond, a lady of French extraction, had under her supervision eight sub-principals and forty teachers. Tuition was not only free, but the empress gave each pupil a dowry at graduation; \$1,460 to the aristocracy, and \$73 to the commoners. Such a marked distinction between the two classes, at a time when the order of nobility in Russia had lost all political significance, was particularly injurious in a school. One class was finely dressed, the other was clothed in coarse materials; the former were taught the "polite branches," the latter learned to sew, wash and cook. But we think that utility, rather than class prejudice, influenced Catherine II. She writes to Voltaire: "We instruct the pupils that they may be able to make themselves agreeable to the families which they may enter. We wish them to be neither prudes nor coquettes, but good mothers, and capable housekeepers."

Another feature of her system of education was her distrust of home influences. The ideal education in Russia was a school whose vigorous laws prevented as far as possible all vacations and family intercourse; Catherine believing, it is said, that society in her time was a prey to corruption, and that it was impossible to rear a pure and chaste generation by any other system. She lavished upon the young captive an affection almost maternal, heaped honors and marks of favor on the most distinguished pupils, and allowed them to wear her monogram in gold, all their lives. She delighted in diverting and purifying herself by contact with their innocence, and, like Madam de Maintenon, she enjoyed having them represent French plays for her. In a word, the life which the pupils of the Resurrec-

tion led was that of a convent, with an occasional glimpse of the splendors and dangers of the court; a convent life, but a convent of which Catherine the Great was abbess.

But her work was by no means perfect. She encouraged superannuated rivalries and pretensions of caste and class among the pupils. She endeavored to dispense with parental coöperation in the education of children, and was ruled by a prejudice too narrow to meet the exigencies of life. Even the luxury which Catherine II. displayed in all her schemes, a luxury which might produce an injurious effect on poor young persons, whose dowry of \$1.460 could not secure them a fortune, served at least to awaken public opinion, and to open the eyes of the Russians to the importance of female education, a question which had until then been generally neglected. Besides, notwithstanding the word "convent," we must not lose sight of the fact that this was the first attempt at secular education. At that time, even after Peter the Great, Russians had no conception of instruction other than that imparted by the clergy. Parents cried when obliged to place their children in secular schools, as in the days of St. Vladimir, Russian mothers were in despair when they saw their children forced to learn those dangerous branches of witch-craft,—reading and writing.

Another empress developed the idea of Catherine. Maria-Feodorovna (Sophie of Wurtemberg), the widow of Paul I., devoted herself to founding hospitals, asylums, and especially schools for girls. The immense fortune which she bequeathed to these charitable institutions is now under the control of a special department, the department of the Empress Maria.

For a long time attention was directed exclusively to the education of daughters of the nobility, and institutions were founded for that purpose. They are now quite numerous. Seven of the principal ones are in St. Petersburg, four at Moscow, and about fifteen in other cities. These establishments have retained some of the characteristics of that founded by Catherine II. They have been accused of neglecting scientific instruction, history, geography, natural sciences, and mathematics, but now their standard approaches more and more that of the gymnasium. The living

languages, however, and particularly French, are learned with a perfection not attainable elsewhere. The pupils in boarding-schools are in constant intercourse with teachers, who converse with them in French, German or English, while on the other hand students who live at home, and do not hear foreign languages spoken, quickly forget them. Much has been said of the disadvantages of boarding-schools. However great may be the devotion, and however superior the education of those who are called to supply the place of parents, it is impossible, in the generality of cases, to replace them entirely. There is something artificial and abnormal in a convent life, deprived as it is of the sympathy, counsel, and experience, which is found in the family. Uniform rules, which subject the most diverse characters and organizations to the same plummet, finally destroy all individuality. A child cannot with impunity be condemned for fifteen years to work, sleep, eat, and play, at certain hours, while hundreds of other children do exactly the same things at exactly the same times. Toward the end of the course discipline is slightly relaxed, parents are admitted to the parlor during certain hours, and generally vacations are granted.

These institutions may, however, justly be reproached with having preserved the exclusive character of that founded by Catherine II.; admission is not free. For example, the one at St. Petersburg admits to the "Society of instruction for noble girls," only those whose fathers hold the rank of colonel or councillor of state. At St. Elizabeth even those who pay must be girls whose fathers belong to the hereditary nobility, while royal assistance is granted only to those whose mothers are members of the order of St. Elizabeth, and whose fathers have at least the rank of captain on an army staff. At the school of Alexander, the *tchin* of lieutenant-colonel or titular counsel is demanded. The institution of Paul is the most democratic of all; a certain *tchin* is required in order to obtain pecuniary aid; but girls of all classes are received as boarders, provided that the father is not obliged to pay poll-tax; so that commoners, whose citizenship is well substantiated, or merchants duly enrolled in a *ghilde*, may send their children there; but the

daughters of a free peasant or rich farmer are excluded. While we admit that some institutions have half opened their doors to girls not belonging to the nobility, still we cannot affirm that they are especially designed for them, to say nothing of the repugnance with which a commoner would regard being separated from his daughters, and seeing them instructed in ideas foreign to their position in life.

At the same time we cannot refuse a tribute of praise to the work of the Empress Maria-Feodorovna. Twenty-six large institutions are to-day open to the daughters of the Russian nobility, a class which is constantly recruited from the lower ranks, because of the fact that those who are distinguished for civil or military services are rewarded by a patent of nobility. The women of the Romanof dynasty have set a good example. They have not only used public funds for improving the condition of their sex, but they have devoted their private fortunes to the same purpose. By delicate attentions to the pupils, they have enhanced the value of education. The festivals of the institutes are fêtes for the court, as well as for the schools. The empress, emperor, and princes of the imperial family, are present at the distribution of prizes, and each in turn gives a fête to the class graduating from the convent. In apartments of the imperial residences about St. Petersburg, it is not unusual to find portraits of graduates. The girls who, in leaving the palace decorated in their honor, are often obliged to seek an humble position, carry with them pleasant memories and encouragement from that one day of splendor, and sometimes regrets and fancies may haunt them. But never mind; let us do the Russian rulers justice: in founding these institutions they have shown that they have interested themselves in female education more from the love of it than from political reasons.

In the meantime the middle classes seemed to be forgotten. The institutions being almost entirely closed to them, there was nothing left but private schools. It is hardly probable that these were superior to the public schools as regards the programme or method of study, for the great awakening and progress of education dates only

from the beginning of the present reign. Let us quote one of the most severe passages of Gogol in his "Ames Mortes." He introduces to us a country gentleman, Tchitchikof, and his wife Manilova, he traces the portraits of the couple, their quaint good humor and the "surprises" to which the wife periodically treats her husband; for example, when on his birthday she presents him a Greek hat embroidered with her own hands, or a tooth-pick box ornamented with beads.

"Manilova had received a good education. Now a good education, as everyone knows, is to be obtained in boarding-schools, and in boarding-schools, as everyone knows, there are three things which constitute the foundation of human perfections: French, indispensable in polite family intercourse; playing the piano, in order to make the husband's time pass pleasantly; and finally, that which especially concerns the economy of the family, the ability to embroider purses and to 'surprise' people. Besides these, there are various improvements and modifications of methods, particularly in these latter days; all depends upon the wisdom and talent of the principal. In some places they proceed after this manner, first piano, then French, and finally the ornamental branches. Others begin with the ornamental part, that is with embroidering purses and surprising people, then French, and piano last of all. There are 'different ways.'" Different ways no doubt, but to us they all appear to have the institution of Catherine II. for their starting point.—*Revue Des Deux Mondes*.

A BOSTON school teacher says the following occurred in her school: Question—What is a point? (Answer—A point is that which has position, but no length, or breadth, or thickness.) The reply given by one of the class was—"A point is that which has physician, but no length, nor strength, nor sickness.

GEOGRAPHICAL NOTES.

UNITED STATES.—At a recent examination for admission to Bowdoin College, according to the *Concord Monitor*, the written papers on geography contained the following: "Iterly" for Italy, "Merrymac" for Merrimac, "Pernobscot" for Penobscot, "Florady" for Florida, "Mississuri" for Missouri, and "Nareganset" for Narragansett. The Catskill Mountains were credited to Vermont by one writer, by another to Pennsylvania: the Alps to Asia by a third. Stockholm was set down as the capital of Holland; Berlin of Spain. Geneva was transferred to Italy; the Rhine was said to flow into the Atlantic; the Danube into the Baltic.

—A Maryland and Delaware Ship Canal Company has been chartered by the former State and authorized by the latter "to cut and make a canal to connect the waters of the Chesapeake and Delaware Bays, which shall be and remain a public commercial highway, open to all vessels upon terms of the most exact equality," and so constructed as to enable the largest vessels to pass each other. There seems to be no doubt that the enterprise will be seriously undertaken, as the advantages of such a short cut (especially to Baltimore) can hardly be overrated. The opportunity might be improved to import foreign labor of good quality, such as the Italians who were misled into coming to New York last winter, but who proved to be a most lucky reinforcement on account of the severity of the season, which ensured them employment on the streets. Italians, it will be remembered, excavated the Suez Canal. Secretary Stanton once threatened to set up a Government saddlery in Southern Delaware in order to outvote the native aristocracy of that part of the State, which has under the Constitution an undue preponderance in the Legislature. The presence of naturalized citizens in large numbers for a space of two or three years might easily lead to a political revolution. The termini of the canal have not yet been selected. On Delaware Bay the breakwater at Lewes seems

the natural embouchure; on Chesapeake Bay the choice evidently lies between Sassafras, Chester, and Choptank Rivers.

—The Legislature of New York, contemplating the vesting in the State of the titles to the timbered regions of the Adirondack wilderness, authorized an accurate survey of that region by Mr. Verplanck Colvin, who corrected the heights of many mountains, and exposed numerous errors in regard to the water-sheds, besides arriving at some very important conclusions. Lake Champlain, by the way, was found to be 91 feet above tide-water. Mr. Colvin says that

“It is now a question of political importance whether the region covered by this survey should not be preserved in its present primitive condition as a forest-farm and a source of timber-supply for our buildings and our ships. The deprivation of a State of its timber is a grave error in political economy, and at this time when the Western States of the Union, feeling their deficiency, are laboriously planting forests, it behooves us to see to the preservation of those with which we are spontaneously blessed. The question of water supply is also intimately connected with this proposition. I have elsewhere expressed my opinion that within one hundred years the cold, healthful, living waters of the wilderness—the home of the brook trout, a fish that cannot exist in an impure stream—will be required for the domestic water supply of the cities of the Hudson River Valley. If the present ratio of increase of population continues, the Valley of the Hudson River must eventually contain one long marginal city, extending from the Mohawk River to New York. The Adirondack Wilderness is the only water-shed which will afford a sufficient supply of pure water for such a population as will then exist.”

He proposes an aqueduct 200 miles long connecting with a dam on the Hudson River just above its junction with the Schroon River.

—Lieut. Wheeler has ascertained that a railroad can cross the Colorado River near the foot of the Grand Cañon in Arizona.

CENTRAL AMERICA.—San Salvador, capital of the republic of the same name, and which has been a continuous settlement on its present site for nearly 340 years, suffering in that time from earthquakes nearly as much as Antioch, and being destroyed by one on the night of April 16, 1854, has been again annihilated. Premonitions and slight shocks had pre-

vailed from the first of March, and had induced most of the inhabitants to remove from their houses or from the city, camping in the open places, so that when the prolonged and awful quaking of the 14th occurred in the early morning it caused the destruction of comparatively few lives. The only house absolutely uninjured was a wooden frame one, while the low stone and adobe dwellings, together with the Cathedral and other public buildings, were reduced to ruins. San Salvador lies about thirty-five miles from the sea, its port being La Libertad, which also felt the shock, though less so than one on the 4th of March. The Nicaraguan port of Corinto is 125 miles distant, and there a sudden wave drifted an incoming steamer in such a manner as to stop her engines. San Salvador is surrounded by volcanoes on every hand, and indeed is built at the foot of one which bears the same name—or rather we may call it misnomer. Violent blows on the soil, or the rapid passage of horses over it at any time, is followed by distinct echoes and reverberations. The coming of earthquakes is usually foreboded by domestic animals sooner than by man, as is manifested by their uneasiness and disposition to break loose and stampede.

—The Darien Exploring Expedition under Commander Selfridge (stereoscopic views of whose former explorations were described in our March notes) was engaged that month in exploring the divide between the Pacific Ocean and the head waters of the Atrato River, which empties into the Gulf of Darien. One of these tributaries, the Napipi, is said by a *Herald* correspondent to possess in its valley all the qualifications requisite for the proposed canal. Another, further north, the Tracundo, was also explored with great difficulty to its junction with the Cuia.

SOUTH AMERICA.—The famous volcano of Cotopaxi, in Ecuador, has been ascended by a German savant, Dr. Reiss, who, with Dr. Stubel, has for the past four years been exploring the valley of Quito. The ascent took place on the 27th and 28th of November last, from the south-western flank of the mountain, the night camp being at an altitude of 15,179 feet. Lava streams were encountered, still smoking—

the same, probably, which flowed in 1854, and which, by melting vast quantities of snow, caused much devastation in the valley by floods. The crater, when reached, presented an elliptical form, with its major axis lying north and south.

"The stones which were continually falling in from all sides, but especially from the west side, rolled together as to the bottom of a funnel; there were no signs of a level bottom. The depth, roughly estimated, appeared to be 1,500 feet. The side of the funnel least inclined, and by which alone it is possible to descend, is the south-west; but here are large fumaroles sending forth dense masses of vapor charged with gas, and having a temperature of 156 degrees. Around these fumaroles were masses of sulphur and a deposit of gypsum mixed with chloride of lime. This is of great interest as being the first instance of a chloride being found among the products of the South American volcanoes. Humboldt thought that the absence of hydrochloric acid was a characteristic of the new world volcanoes. The barometer gave 19,660 feet as the altitude, while the doctor's trigonometrical observations, repeated at various times from independent bases in the valley, had given him 19,496 as the height of the north peak, and 19,427 for the southern. Both results exceed the altitude estimated by other travelers. Humboldt made it 18,880 feet. Dr. Reiss says he felt no inconvenience from the rarefaction of the air. This difficulty in ascending high altitudes begins at the height of 12,000 to 13,000 feet, but does not appear to augment with the altitude. All the peones with Dr. Reiss complained of sickness, and one stout fellow bled at the nose. The mules also suffered much above the altitude of 13,000 feet; but his dog, although evidently troubled for breath, followed him to the crater."

ASIA.—The American Palestine Exploration, under command of Lieut. Steever, is now in the field of its labors, which, by the concession of the British Exploration, consists of the whole country east of the Jordan, embracing the old territories of Moab, Gilead, and Bashan.

—The American Secretary of Legation at St. Petersburg, Mr. Eugene Schuyler, has obtained leave to make a summer tour in Central Asia, in the debatable land between Russia and Afghanistan. He proposes to aid in verifying the maps of the country, to settle its topography and limits, to note its resources and products, and to observe the condition and language of its inhabitants. The results of his explorations and observations will probably be communicated to the American Geographical Society.

—The taking of the Census in Bengal, covering an area of 250,000 square miles and a population of nearly 67,000,000 souls, has cost the Government not more than \$135,000. This economy was effected by getting the people to number themselves, and the leading inhabitants in every district appointed to this service without pay showed a marked appreciation of the privilege.

“In the Santhal country the village headmen kept their reckoning by means of knotted strings of different colors, black for male and red for female adults, white for boys and yellow for girls. In some villages seeds or gravel served the same purpose, one person being told off to count the men, another the women, and so on. In Orissa, four months before the Census, Mr. Ravenshaw went from village to village, preparing the people for what was coming, until even the rude hill chiefs entered heartily into the scheme. Very few cases of extortion have been discovered, and only one riot took place. The preparations for taking the Census gave birth to a rich crop of absurd rumors among the more credulous classes. In Orissa it was widely believed the Government was going to repay itself for the cost of the famine. Some people thought that only male adults would be taxed, because their names only were recorded. One man refused to let his baby be numbered because it was too young to be taxed. Many people fancied that the Census was a means of forcing immigration to Mauritius and Assam. In Murshidabad it was rumored that the authorities designed to blow the surplus population away from guns. Elsewhere it was given out that men were wanted to fight the Russians, or to serve as coolies against the Loshais. In Faridpúr the surplus women were to be carried off to supply the want of women elsewhere. In Noakhali it was ‘General Sahib’ who had a longing to look at all the women of a certain age. Others thought that everybody was to be vaccinated forthwith. In the Tirhút no one would stir out of doors on the night of the Census for fear of being crippled by the ‘ill wind.’ These fears, however, seem to have been generally removed by the explanations of the Government officers. ‘What wonders the British Government has achieved,’ exclaimed the villagers of Rájshahai. ‘The great Akbar never attempted such a thing.’”

—In passing from Burmah across the Chinese frontier into Yunnan, an expedition sent out by the British Government in 1868 encountered a people called Shans, together with what may be regarded as transitional varieties between them and the Burmese and Chinese respectively. The Shans have a method of concealing gold and precious stones by burying them beneath the skin of their chests and necks

by making slits, through which the coins or stones are forced, and which subsequently heal up. A second cut made on the spot serves to extract the valuable object.

"The Kakhyens or Chingpaws, though hemmed in on either side by Buddhist nations, still retain an ancient worship of good and evil spirits whom they call 'nâts,' and to whom they are constantly making propitiatory offerings of pigs, fowls, and rice. Their method of producing fire is very remarkable, and is effected by 'the sudden and forcible descent of a piston in a closed cylinder. There is a small cup-shaped cavity at the end of the piston rod, into which a little tinder is inserted. The piston is then introduced into the cylinder, which it tightly fits, and by a blow is made to descend with great rapidity and force, and is as rapidly withdrawn, when the little pellet of tinder is found to have become ignited.' The instruments are not more than four inches long, and are in general use. It would be highly interesting to trace the origin and date of this invention."

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Periodical Literature.—The *Nation* for April 24, May 1, and May 8 contained three highly interesting articles on the three northern and northwestern provinces of China, viz., Shanse, Shense, and Szrchwan, as observed by Baron Richthofen in his journey through them, undertaken with the support of the Shanghai Chamber of Commerce.

Cartography.—The Russian Imperial Geographical Society has been presented with a native map of Japan, on the scale of about 6 miles to an inch, which cost the author the privilege of dying in his own country. This map of Inn-Kami was used by the English Admiralty in preparing its charts of the coast of Japan—a testimony to its great accuracy. The plates were burned at Yedo in the revolution of 1868, and copies are now extremely rare. Petermann's *Mittheilungen* for March 4 offers a map of Southwestern Germany at the outbreak of the French Revolution in 1789, and the sight of it, with its intricate colored patchwork of petty territories, is enough to make any one an ardent advocate of German unity. The map is borrowed from the current issue of Spruner's Historical Atlas (New York: L. W. Schmidt.) Petermann also borrows from Stieler's Hand-Atlas a map of the eastern half of Australia, in order to show the telegraphic system of that continent. No. 43 of the *Journal* of the Berlin Geographical Society has a map of all the routes leading from the Caspian Sea to Khiva.

—The *Challenger* arrived at St. Thomas, March 16, and off Sandy Hook en route for Halifax the last week in April. Its constant soundings after leaving Teneriffe showed that a pretty level bottom runs off from the African coast, deepening gradually to a depth of 3,125 fathoms at about one-third of the way across to the West Indies. If the Alps, Mont Blanc and all, were submerged at this spot, there would still be half a mile of water above them. Five hundred miles farther west there is a comparatively shallow part, a little less than two miles in depth. The water then deepens again to three miles, which continues close over to the West Indies. At the deepest spots both on the east and west side of the Atlantic, the dredge brought up a quantity of dark red clay, which contained just sufficient animal life to prove that life exists at all depths. No difficulty was experienced in obtaining these deep-sea dredgings, and it was merely a question of patience, each haul occupying twelve hours. In depths over two miles little has been found, but that little was totally new.

—A Russian man-of-war was sent to Papua towards the end of November in search of the missing Russian naturalist, Michlucha Maclay. See our December Notes, 1872.

—Mr. Ernest Giles, whose expedition was referred to in the same Notes,—namely, from Charlotte Waters, at a point on the Overland Telegraph, 570 miles north of Port Augusta, in Australia, westward,—has returned, having met with but partial success, on account of desertions among his companions.

—A despatch from London, dated April 27, states that the *Daily Telegraph* explorer in Assyria has met with great success. He has found eighty new inscriptions, including histories known and hitherto unknown of the Assyrian Kings. Among his discoveries is a highly important tablet, containing a collection of proverbs in two languages, which will aid in the further elucidation of the whole class of inscriptions. Many of the inscriptions have definite dates.

Photography.—By special favor of the Messrs. Anthony, we are furnished this month with passports to the National Yellowstone Park—as yet not opened to the general public, or if open, not accessible to you, reader, or to us. Our first object is the *Crater of the Grand Geyser* (No. 18), in the valley of the Fire Hole River. Deprived of its coloring, it doubtless loses something of its picturesqueness, though when quiescent as here represented, it has “no raised rim, and is a very modest-looking spring,” whose oblong orifice is enclosed by “rounded masses of silica, from a few inches to three feet in diameter, looking like spongiform corals.” (See for this and the succeeding Yellowstone views, Dr. Hayden’s Report for 1871, or the more handy “Wonders of the Yellowstone,” by James Richardson, published by Scribner, Armstrong & Co.) When in action it spouts to the height of 200 feet. The distant view in this picture is very pleasing.

No. 51, *Tower Falls*, (156 feet high), has all the elements of the picturesque, the stream seeming to issue from a hole in the side of a grand pinnacled cliff. "One could almost imagine," says Dr. Hayden, "that the idea of the Gothic style of architecture had been caught from such carvings of nature." This feature is much more striking, however, in No. 98, *Palisades of the West Gallatin*, where we have most beautiful cathedral-like forms, harmonizing perfectly with the evergreens on the river bank. No. 112, *Head of Black Fork*—a name which we do not find in Hayden's Report—gives a noble vista down a valley between lofty and snow-clad ranges. We presume it is that odious vegetable growth, the sage brush, which is most prominent in the foreground of No. 137—*Shoshone Village in the Wind River Mountains*; but the eye need not rest long on it, nor on the two Indians squatting in the midst of it. It may delight in the dotted wigwams near the foot-hills, or take its final enjoyment in the lovely mountains just outlined beyond. The grim icy range of the *Tetons*, No. 66, looking south, rivals any Alpine scenery we ever beheld; which we take to be enough of a compliment. In No. 116, we have a curious illustration of *Beavers' work in cutting down trees*. It is hard to believe that the woodman's axe has not been heard here.

From the Tetons to Utah is but a step—at 591 Broadway. That step lands us first in Salt Lake City and before *Brigham Young's House* (No. 78 of "Views in the Cañons of the Colorado River and among the Aztec Cities of Arizona," taken by Powell's Exploring Expedition; concerning which we may refer to our Notes in the MONTHLY for April, June and September, 1872.) The broad and well-shaded avenue on which it is situated, and the curious barren range in the distance, will chiefly excite attention. In No. 75 we have the famous elephant-backed *Mormon Tabernacle*. *Johnson's Ranch* in Southern Utah, No. 1, described as the future stronghold of the receding Mormons, is a bird's-eye view of a broad and probably fertile valley. For the character of this part of Utah see our March Notes. The Ranch is about 15 miles from Kanab, an actual Mormon settlement, 70 miles from which again Kanab Cañon, the largest of the subsidiary cañons, with walls 1,500 feet high, enters the main Cañon of the Colorado. It is cut through the so-called Kibab Plateau or Buckskin Mountains, and Nos. 35 and 37 are taken from this elevation. They show the most remarkable series of peaks and chasms of which the mind can conceive, even in dreamland or cloudland. No views that we have yet named can compare with these in singularity and grandeur. No. 39, *Sentinel Rocks of the Kibab Plateau*; No. 4, *Peaks in Kanab Cañon*; No. 14, *Camp Scene* in the same, in which one feels the awful height of the sides of the cañon; No. 7, *Fern Shower-bath* in the same—all these fully initiate the beholder into the mysteries of this wonderful region. A pleasant amphitheatre is *House Rock Springs*, on the east side of the Kibab Plateau, Arizona, No. 40 (see June Notes, 1872); and still more open and inviting is *Surprise Valley*, No. 27, with what we take to be a cottonwood grove

along the stream at the bottom. No. 30 shows the *Outlet of Surprise Valley*—a remarkable instance of erosion; the title on the back refers to hieroglyphics (see June Notes) invisible to our search. We come upon the Aztec cities east of the Colorado with No. 47, the *Moquis Pueblos*, built upon a high *mesa* or table-land, which really contains three towns (*pueblos*), as shown in No. 65, where the flat-sunk roofing of the nearer houses is well-shown. This view is remarkable for clouds reflected in a pool in the foreground. No. 49, *Oribay*, with more of these curious stone and mud dwellings; still better No. 57, *Me-shong-an-avah*, showing how these cities are built around a square without gate or other ground entrance, accessible only by ladders to the first story, whence steps and ladders raise one to the second and third. The interior view of this town, No. 58, reveals the same mode of reaching the common court-yard or plaza; every man's house being truly his own castle. A group of *Aztecs* is pictured in No. 71; of *Navahoe Indians* in No. 45. We take leave of this fascinating collection with No. 15—a *Barrel Cactus*, over six feet high, the figure of a man conveniently furnishing a standard.

DO PLANTS BREATHE?

“ It is my faith, that every flower
Enjoys the breath it breathes.”

SO sang the poet Wordsworth; and, though science has as yet failed to discover any foundation for the poetic fancy that plants have souls, and that they enjoy the sunshine, or dread the frosts of winter, this much has been clearly proved, that plants *breathe*, and that by that breath they live. Every green leaf is a delicate lung, and acts the same part in the economy of nature that the lungs of animals do; separating from the air that element which the growth of the plant demands, and discarding or *exhaling* that which is of no service.

As, for the growth of the animal, the body requires oxygen; so, for the support of all vegetable life, carbon is needed. When men breathe, they take into their lungs oxygen, which there combines with the carbon of the blood, forming a third compound gas, known as carbonic acid, which is breathed out, and in this state is of no value, but rather dangerous to *animal* life. Were there no way of restoring

to the air the oxygen which is united to carbon in this gas, then would all animals sicken and die, just as do those birds and beasts which attempt to cross that dark valley in Africa which is said to be so full of carbonic acid as to poison all who enter it.

But, though the lungs of man and beast are not able to obtain the needed sustenance from the dangerous gas, it is not so with the leafy lungs of the plant. So delicate are these organs, that they take up freely the carbonic acid; and as, in this case, the food they want is carbon, they retain this, and breathe back or exhale oxygen, which is now free, and ready for man's use again. But how can you prove this fact, that plants breathe out oxygen? The answer is given in the illustration before us; and, as the apparatus used is extremely simple, an explanation of it will best convey our meaning.

Having placed in a glass funnel a few fresh green leaves, invert it in a tumbler of fresh water, as here shown. Now close the opening above, and draw off some of the water in the glass. If this vessel be now placed in the sunlight, bubbles of gas will form on the leaves, and rise into the top of the closed funnel.



When a sufficient quantity of the gas has so collected, remove the cork, and hold above the opening a glowing match or shaving. The result of this will be, that the gas which comes from the funnel will strike the glowing coal above, and cause it to ignite,—a result which is evidence, together with certain others, that the gas was oxygen. In order to render the idea more plain, an illustration was prepared which exaggerates a little; and yet with care and patience the result may be satisfactory, though it would be best, if possible, to insert the glowing coal into the gas, rather than trust to the force of the current to light it. Above we have chosen to present and illustrate this simple fact, since it serves to show how man is dependent upon the vegetable world, not for food merely, but for the very air he breathes.—*Industrial Monthly*.

CORRESPONDENCE.

THE KINDERGARTEN IN THE PUBLIC SCHOOLS OF NEW YORK.

MR. EDITOR,—The following brief communication is not merely of a personal, but also of a professional interest; otherwise I would not appeal to your sense of justice to lay it before your readers.

The annual report of the President of the Normal College of the City of New York, for the year ending December 31st, 1872, contains the following paragraph :

"THE KINDERGARTEN SYSTEM.

"I regret exceedingly that the experiment initiated by Dr. Douai to test the merits of Froebel's system was not successful. It is not necessary to enter here into any explanation as to the cause of failure; it is enough to know that the fault is not in the system itself, for recent investigations in Germany have revealed the fact that the young men belonging to the gymnasia and the universities who had received a Kindergarten training in childhood made the best and most accurate scholars. In the new Model School . . . it would be wise to form a Kindergarten class and give the system another trial."

This passage is so artfully worded as to leave no other inference than that the subscriber is responsible for the failure of the trial mentioned. Here are the facts, which will not be denied.

In the fall of 1870, Miss Elizabeth Peabody, who had delivered in New York one or several lectures on the Kindergarten system, recommended me to members of the Board of Education of that city as a proper person to deliver some lectures on the same subject before the pupils of the Normal College. The member of the Board who engaged me and my daughter, a practical Kindergartener, was Mr. Nathaniel Sands, who afterwards left the arrangements in the hands of the President of the Normal College. The purpose for which we were engaged was not "to test the merits of Froebel's system," but it was that of imparting to the pupils of the Normal College a first acquaintance with the theory and practice of that system in a course of twenty short lectures. It was understood by all the contracting parties that these lectures were to be followed by a course

of normal Kindergarten training under the guidance of other persons, to be continued for a sufficient period of time ; the lectures were solely to be an initiatory step to that measure, for the success of which all the conditions necessary were wanting for the moment.

After my first lecture, I was coolly notified that the purpose was to be changed. Instead of *lectures* I was to give *lessons* in Kindergartening, lessons not to the pupils of the Normal College, but to the teachers and children in the Model Primary School ; this change was said to be for the better, because the Board of Education was in full earnest to make forthwith a practical beginning with the system on a small scale, and to have the teachers of that model school acquainted with the art. I protested against this breach of the contract, explaining that nineteen lessons, which would barely suffice to present every branch of Kindergarten occupation but once, and for a short time, might prejudice a proper appreciation of the noble cause, unless the teachers to be initiated were both able and in earnest to study the art privately besides. At last, however, I was induced to believe them in earnest, and hoping that the lessons might benefit them and disarm the prejudices of others, I acceded to the new demand. In vain was I warned by two literary New Yorkers, deeply interested in the cause of education, that the experiment might be intended to be futile and so might prejudice the cause itself. I could not believe in such a purpose.

It turned out to be an experiment under insuperable difficulties. A double parlor stuffed with 160 children of from six to eleven years of age, and seven teachers, beside ourselves and some occasional visitors, was our theatre, and this fact alone was almost sufficient to thwart the purpose intended. But the greater obstacle to success was the aversion of the model teachers, or at least their principal, to the innovation, an aversion which could not long be disguised.

In the City of New York they carry out the novel plan of handing over a model primary school, not to experienced and tried practitioners, with the occasional aid of incipient teachers, who are to make their first experiments under the guidance of the former. No, the model teachers are—who?

but the recent graduates of the Normal College, those who have graduated with the highest honors. Of the seven with whom we had to do, only one seemed to have a short practical experience as a teacher. In the Normal College itself, which is more a lady's high school than a professional training institute for future teachers, no occasion whatever is presented to the pupils to witness, much less to practice teaching as an art. The graduates may be worthy of the honors conferred upon them, but they cannot be expected to be a few days after graduation teachers of model classes, much less to be judges of highest resort about the "merits of Froebel's system." But they were left to be almost the only judges on our efforts, efforts of a truly herculean kind. Not one of the influential members of the Board of Education, not one of the Superintendents, save one who dropped in twice for half an hour, made his appearance in our lessons. Misses in their teens were the arbiters of "the merits of Froebel's system," as presented by us.

These facts will, without any further comment, explain what I began to see by the time those few lessons came to an end, to-wit, that our experiment would leave no perceptible fruit. That it was intended to be fruitless, on the part at least of some influential persons, did never enter my mind till now that I read the above paragraph. The latter would never have been inserted in an official report, unless it was for the purpose of an aspersion on my professional character, an aspersion which, to some New York politicians, may seem to be a proper revenge for my criticisms on some features of their school system.

ADOLF DOUAL.

TURKEY has recognized the right of literature by an enactment of a copyright law. The exclusive property in an original work, with the right of translation, is conferred on the author, his heirs or assigns, for forty years; for translations, the privilege to be for one-half that period. All rights can be sold for the whole or any part of said term, and piracy of copyright will be punished by penal measures.

EDUCATIONAL INTELLIGENCE.

CALIFORNIA.—OAKLAND.—The California University is as lucky as it is deserving. Gifts are pouring upon it in an avalanche. There is the Tompkins \$50,000 Oriental Professorship; there are the Toland Medical College property, Mr. Reese's gift of Dr. Lieber's library, and his intended purchase—a large and valuable library, for the university in Europe. Large and well-arranged cabinets of mineralogy, geology, and archæology, have just been presented; also a quartz battery and ten acres of land adjoining the university. Several gentlemen have lately made gifts in money.

FLORIDA.—In the last report, the whole number of schools in the State was given as 331. The establishment of 113 additional schools raises this number to 444, an increase of more than one-third in the number of schools. The aggregate of pupils has also increased from 14,000 to 16,258. The ratio of pupils enrolled in the common schools last year was about one-fifth of the youth between 4 and 21. This year it is over one-fourth. If it is saddening to reflect that three-fourths of the youth of the State are yet unreached by the educational system, it is surely encouraging to know that the ratio is so rapidly changing. A similar rate of increase, could it be secured, would in less than twenty years enroll every child in the State in the public schools.

INDIANA.—BLOOMINGTON.—Another building is to be added to the Indiana State University. It will be useful above anything else for the accommodation and exhibition of Dr. David Dale Owen's very valuable collection in mineralogy, geology, and zoölogy. The second floor will be used for the library of the institution. This already numbers 7,000 volumes, and \$2,500 is expended upon it every year. The attendance during the present year has been greater than at any previous time in the history of the university. The establishment of two additional chairs in the Literary Department is contemplated.

MAINE.—Whole number of scholars between 4 and 21, 226,751, of whom 49 per cent. were regular school attendants. 78 new school houses have been erected during the past year, making the present number 462. The aggregate amount expended for schools is \$991,607. The Superintendent recommends some form of intermediate inspectory agency between the Town Committees and State Superintendent, to increase the efficiency of the present supervision. He also favors placing free-hand drawing on the list of prescribed studies. Another recommendation is: "some form of legislation to secure the education of *all* the youth in the State."

MASSACHUSETTS.—On the 22d of April, Mr. John Anderson formally transferred Penekese Island to the trustees of the "Anderson School of Natural History." The grantees named in the deed are Louis Agassiz, Alexander E. R. Agassiz (his son), Thomas G. Cary, Martin Brimmer, Theodore Lyman, and their successors, as trustees of a normal school for teachers and students of natural history. With the island and appurtenances, Mr. Anderson gives two bonds of \$25,000 each, New York City Central Park Addition Fund of 1874. The deed appoints Prof. Agassiz, President of the Board of Trustees, and Director of the school, with the sole authority to appoint teachers and lecturers, and prescribes the course and methods of study, and Mr. Cary is appointed treasurer. Mr. Anderson reserves the right to reside on a promontory of about fifteen acres, at the eastern extremity of the island; also, the right to appoint an additional trustee. Five trustees shall always be residents of Massachusetts, and one of New York City. The trustees are authorized to expend a portion of the fund of \$50,000 for the erection of such buildings as are immediately needed, but the fund shall be made good to \$50,000 from the first donations subsequently received. The specimens in natural history required for the use of the school shall be furnished from the Museum of Comparative Zoölogy at Cambridge, and the school shall be the educational branch of the museum, and it may be the exclusive place of instruction in natural history in connection with Harvard College,

but its business matters must be kept totally distinct from the college.

The people of New Bedford propose to further endow the school with a gift of \$10,000, and Mr. Anderson expresses his confidence that some of his New York friends will add to the fund by substantial gifts. Prof. Agassiz's dream is to make the school earn a fame equal to that created by Liebig's for the University of Giessen.

NEW JERSEY.—ORANGE.—A law of this State, as our readers have already been made aware, offers annual aid to school districts, to the amount of ten dollars, towards building up a school library; the gift being conditional on the raising of twice that amount. The High School District of Orange lately raised \$40, and besides earning the \$10 promised by the State, received a gift of \$50 from the New England Society, making a sum total of \$100. This was expended in increasing the scanty reference library of the High School, and we give below the list of works purchased ;

Webster's Dictionary; Adler's German Dictionary; Spiers and Surene's French Dictionary; Andrews' Latin Lexicon; Smith's Dictionary of Classical Biography and Mythology (3 vols.); Long's Classical Atlas; Stieler's Modern Hand-atlas (11 parts out of 30); Wheeler's Dictionary of Noted Names in Fiction; Bartlett's Dictionary of Familiar Quotations; Taylor's Words and Places; Globe Shakespeare; Abbott's Shakespeare Grammar; Marsh's Origin and History of the English Language; Wilson's Punctuation; Dana's Book of Household Poetry; Greene's Historical View of the American Revolution; Stearns's Concordance and Index to the United States Constitution; Dana's Geology; Gray's Manual of Botany, and Structural and Systematic Botany; and Gray's Human Anatomy.

The school already had on hand Worcester's Dictionary; Lippincott's Gazetteer; Thomas's Dictionary of Biography, and Appleton's Cyclopædia. These works, with those already enumerated, make up a library such as probably few schools of the same grade can boast of in any part of the country. At least, outside of the great cities, we do not know of one which will compare with it. Do any of our readers? Perhaps the most original feature of this library still remains to be mentioned. Together with the foregoing works there were procured two hand stereoscopes and 100

carefully selected stereoscopic views, the nucleus of a collection which can be indefinitely extended, but which already embraces glimpses of countries, peoples, and animal and vegetable life in all quarters of the globe. No greater aid could be imagined for the study of history and geography; and we may safely say that these views are nearly equivalent to as many volumes added to the library. The cost of them was included in the \$100.

NEW YORK.—NEW YORK CITY.—The Committee on Annual Taxes of the Board of Supervisors have made an elaborate report on the College of the City of New York, treating of its origin, history, and present condition. As the result of their investigation the committee recommend a change in the management of the introductory department. At present it is a great expense, is subversive of harmonious action and, although supported out of the general funds, it has become a separate concern. In the commercial course many of the studies are far beyond the comprehension of the students, and the committee question the wisdom of retaining this course as a branch of college education. They further suggest the abolition of the office of principal in the college as being not only superfluous, but actually injurious. Nominally the principal receives a salary of \$1,000, but in reality it is \$4,750, the extra \$3,750 coming from his appointment to a chair which has no existence. For these reasons the committee recommend an immediate abolition of the commercial course and of the office of Principal of the Introductory Department. The report also treats of the Chemical Department, and says that there are more persons employed in it than are necessary. In referring to the library, it says that its condition is far from satisfactory. The library is merely a collection of books, and not a library in the proper sense of the term. The salary of the Librarian is \$3,750 per annum, while the largest library in the city pays its librarian but little more than half that sum. Relative to the discipline of the college, it says that the rules of the college in regard to good manners, morals, and manly propriety have in certain instances been grossly disregarded.

CLINTON.—The Catalogue of Hamilton College gives the

number of students attending there as 149. During the past year donations to the amount of \$56,000 have been received, besides collections of coins, minerals, models of mechanical inventions, etc.

OHIO. — DAYTON. — Number of youth between 5 and 21 years of age, 14,828. Total number enrolled in public schools, 5,715. Total average daily attendance, 3,328. Accommodations are provided for 5,153 pupils. The school property is valued at \$395,465.

CURRENT PUBLICATIONS.

WE believe in illustrations. There is nothing like addressing the mind through the eye. Hence, when practicable, truth should be illustrated. This may be done by passing word pictures before the mental eye, or by means of cuts, diagrams, charts, etc., presented to the outward eye. Properly used, illustrations are efficient and admirable aids in imparting instruction. In some branches of knowledge, indeed, such as geometry and surveying, cuts and diagrams are almost indispensable. In others, however, such as mental and moral science, there is no place for aids of this kind. The only illustrations admissible must be in words. The same may be said of grammar. It is one of the most purely intellectual of all branches of knowledge, and really admits of no illustrating except in words, the things themselves with which it deals. Yet we have before us what professes to be an "illustrated" English Grammar.¹ Professor Holmes's little book contains just twenty-five illustrations, so called. Of these, twenty-one, considered as illustrations, are simply absurd. Take a specimen or two. To illustrate that the component parts of the sentence "Ships sail on the sea" are *words*, the learner is called upon to view a picture, not of ships, but of a barque, a schooner,

¹ FIRST LESSONS IN ENGLISH GRAMMAR. (Illustrated.) By G. F. Holmes, LL.D., Professor of History, Literature and Rhetoric, in the University of Virginia. New York and Baltimore: University Publishing Company. 16mo., pp. 160.

a sloop, and a row-boat, moving over tolerably rough water; the barque crossing the path of the schooner, and the two propelled by winds seemingly blowing in opposite directions. Again, to show that "gender *distinguishes words* with relation to the sex of the things denoted by them," (whatever that may mean,) we have a picture of a rustic bridge spanning a little stream, with a little girl at one end and a little boy at the other. The illustrating of conjunctions is effected by representing a steam-tug towing a ship with a row-boat attached to it. This, in like manner, is ridiculously absurd and meaningless. How such things can be called illustrations in the sense of being means of picturing to the eye what is taught in the words, we confess ourselves utterly at a loss to comprehend. If they are designed to attract the attention of children from the subject before them, and amuse them, they could not well have been more happily conceived. It is fortunate, however, that they are not more numerous. The only illustration in the book that really deserves the name, is on page 43, showing the relative meaning of certain prepositions. And yet this belongs rather to lexicography or the spelling book than to grammar. As a venture in the way of "illustrating" grammar, the book is positively an utter failure.

Its other merits, too, are more or less of a doubtful character. The book is mainly a compilation, with old errors in methods, definitions, and rules frequently reiterated. In the matter of arrangement the book is, in some respects, strangely faulty. The "Practical Suggestions to Teachers" as to how the book should be used, instead of following immediately after the preface, are placed as an appendix at the end of the volume, so that a teacher may not see them till he has gone through the book. In a similar manner, the directions to the learner as to the use he is expected to make of the "Exercises," instead of being invariably placed before, are often placed after the exercises. The volume also abounds with examples of the confounding of words and things; as, "A preposition is a word used to show *the relation of a noun* or pronoun to other *words* in the sentence." P. 44. (In this very sentence of Prof. Holmes's, does the preposition *to* show any relationship between the "words"

noun and *words*, or does *in* indicate that the "word" *sentence* is in the "word" *words*, or the reverse?) This confounding of words and things is a common error with careless writers and blundering teachers of grammar; and if their pupils find it hard to understand their meaning, is it any wonder? On page 143 is a "Remark" about "co-ordinate" conjunctions. The learner may be puzzled to know what these are, as such conjunctions are nowhere else spoken of. He may possibly conclude that they are the same as what are in other places called "co-ordinative." If he does, no thanks to the author. But the volume displays more or less want of care throughout. Of this we could give abundant evidence. But we have already given the little book more space than it deserves, and must drop the further consideration of it.

IN the preparation of the second volume of his *Student's Hallam's Histories*,² Dr. William Smith assures us that he has incorporated the whole of Sir Henry Hallam's last additions and corrections in the text, and only omitted the foot notes, which he seems to have regarded of little importance. The work, as it comes from Dr. Smith's hands, is a very valuable one for students of English Constitutional History, and as such we can conscientiously and heartily recommend it for the use of students; but we must caution those who like original editions or an author's text as he wrote it, that they will find that Dr. Smith has taken very considerable liberties with Hallam. In some instances several pages of the text are transposed without notice, to a note at the end of the chapter, as in the case of Hallam's analysis and criticism of Hooker's "Ecclesiastical Polity" in Chapter IV. In other cases considerable passages of the text are omitted without any notice of the fact. The foot notes, which in all Hallam's works are the very best portions of the work, are generally omitted, and often to the serious detriment of the book for the purposes of the scholar. We do not object to this mutilation of the book for the purpose of abridging it for the use of college students; probably for their purpose

² THE STUDENT'S CONSTITUTIONAL HISTORY OF ENGLAND. Hallam's Constitutional History of England, including the author's latest additions and corrections, and adapted to the use of students. By William Smith, LL.D. New York: Harper & Brothers. 1873.

it is better for being rid of some of the notes which to them would be but learned lumber; but for purposes of general reference we prefer the original work; and we are not quite ready to forgive Dr. Smith for giving the impression that this abridgment is quite equal or superior to the old edition. The series of student's histories by Dr. Smith are, nevertheless, remarkable for their careful condensation, retaining as they do so largely the best thoughts of the authors in their own language. We think the learned doctor must have taken lessons from that Mohammedan Mufti who condensed all the learning of the world for his master, from nine hundred camel loads of volumes, down to a single small volume.

"THE TREATY OF WASHINGTON,"⁽³⁾ will be eagerly read, because of the interest of our people in the subject it treats of, and because Mr. Cushing's reputation leads one to expect an exhaustive and accurate account of it. But we lay the book down, feeling that we have learned little by its perusal. It tells us nothing which we did not know through the newspapers long ago, and while it is well to have the history summed up in one volume, we are disappointed to find it so meagre.

Mr. Cushing's position was such that he was thoroughly informed on all points in connection with the progress of the treaty, but he omits the minutiae, contenting himself with noting the barest outlines. For example, of the transactions between the 15th and 19th of June, when the "indirect claims" seemed likely to break the treaty, we know nothing, though of course, as Mr. Cushing says, many communications passed between the two governments. Mr. Cushing evidently writes as a private citizen, so a feeling of propriety need not have restrained him from entering more into details. But these are negative defects.

The most objectionable feature of the book is the unsparing abuse which is heaped upon Sir Alexander Cockburn. Indeed it appears to have been written to vent a personal spite. Were all the charges brought against Sir Alexander Cockburn true, which is questionable, it is very bad taste

(3) THE TREATY OF WASHINGTON: its Negotiation, Execution, and the Discussions relating thereto. By Caleb Cushing. New York: Harper & Brothers. 1873.

for Mr. Cushing to prefer them, because Englishmen will naturally regard the book as semi-official, and will very properly be offended at it. It is not complimentary to England to assert that the man whom she has appointed as Lord Chief-Justice, and whom she selected as one of the Arbitrators, is ignorant of law and of the usages of ordinary politeness. That there was provocation for this attack in his speeches and manner is probably true, but it is very unfortunate that Mr. Cushing has abused him after such a savage fashion.

BRONSON'S ELOCUTION, so long and favorably known, has been re-edited and enlarged.⁽⁴⁾ The plan of the book remains the same, but the subject is treated of more fully. Indeed in the desire to be explicit, much is suggested which is irrelevant. Elocution is too generally neglected. Boys "speak a piece," but of careful training of the voice, or instruction in gesture, there is little or none. We are glad therefore, to see this reprint of a book on this subject, since it seems to indicate an awakening interest in elocution.

The principles laid down are simple but comprehensive. "The first condition is to have developed a clear, round, smooth voice; the second, is a perfect control of the vocal organs, comprising a distinct articulation of all the elements of sound as expressed by the letters of our alphabet; third, perfect self-possession." The exercises have been selected from standard authors, and are well adapted for elocutionary exercise. In the hands of a competent elocutionist this will prove a valuable book, and we hope that its appearance will arouse new interest in this important study.

"MISS BEECHER'S HOUSEKEEPER AND HEALTHKEEPER," (Harper & Brothers,) is full of useful hints. She tells us how to cook, how to eat, what to wear, and how to put it on. Some of her suggestions for beautifying houses are particularly good. The book is, as the preface claims, "a complete encyclopædia of all that relates to a woman's duties as housekeeper, wife, mother, and nurse."

(4) *MANUAL OF ELOCUTION*, embracing the Philosophy of Vocalization; with illustrations and exercises for drill in all the arts of reading and declamation. By Prof. C. P. Bronson, A.M., M.D. Edited by Laura M. Bronson. Louisville: John P. Morton and Company.

MISCELLANEA.

WE are pained to announce the death, on May 4th, of WILLIAM H. MCGUFFEY, D.D., LL.D., at Charlottesville, Virginia. At the time of his death he was Professor of Moral Philosophy and Political Economy in the University of Virginia. Previously to this he held the positions of Professor of Ancient Languages at Miami University, and afterward of Moral Philosophy in the same institution. For three years he was President of Cincinnati College, and for six years held the same position in the Ohio University. He is extensively known as the author of a series of readers.

THE INFLUENCE OF THE SUN.—How complicated soever the motions of animals may be, whatever may be the changes which the molecules of our food undergo within our bodies, the whole energy of animal life consists in the falling of the atoms of carbon and hydrogen and nitrogen from the high level which they occupy in the food to the low level which they occupy when they quit the body. But what has enabled the carbon and the hydrogen to fall? What first raised them to the level which rendered the fall possible? We have already learned that it is the sun. It is at his cost that animal heat is produced and animal motion accomplished.—*Tyndall*.

SIR JOHN LUBBOCK has exhibited to the British Association a tame wasp which he had brought from the Pyrenees. It eats sugar from his hand, allows him to fondle it, and after taking short flights, always returns to the bottle which serves as its dwelling.—*Schulzeitung*.

WE are indebted to the Italians for the idea of newspapers. The title of their *gazettas* was, perhaps, derived from *gascera*, a magpie or chatterer; or, more probably, from a farthing coin peculiar to the city of Venice, called *gazetta*, which was the common price of the newspapers. Another etymologist is deriving it from the Latin *gaza*, which would colloquially lengthen it into *gazetta*, and signify a little treasury of news.

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FEMALE EDUCATION IN RUSSIA

II.

IN 1855, the reigning empress, Maria-Alexandrovna, consulted the most distinguished Russian educators, and resolved to do for the middle classes what Maria-Feodorovna had done for the aristocracy. Comprehensive schemes of reform were announced at the beginning of the new reign, and while Alexander II was preparing for the liberation of the serfs, his wife was also devoting herself to a work of emancipation. The Russian schools are intended to be an improvement on their models, those of Germany and Switzerland. One of the best girls' schools is that which was opened in Berne in 1836, under the name of "school for girls of the city" (Einwohner-Mädchenschule) and of which Froehlich took charge about 1840. It was founded by a stock company. Froehlich organized four primary, and six higher classes, and completed his system by opening a school for children and a high-school. The latter was a sort of normal school where young ladies prepared themselves for teachers, while at the side of these were others who wished to learn to teach, that they might some day devote themselves more intelligently to the education of their own children. Fifteen years were required for the entire course of study, pupils

entering at four or five years of age and graduating at about nineteen or twenty.

Froehlich formulated the principles of a new system of education, diametrically opposed to that of Catherine II. "The object of female education," he says, "*is the same for all classes*. Rich or poor, the daughter should be nothing more nor less than an obedient child, a good sister, a virtuous girl, and as regards the remainder of her feminine career a faithful wife, a devoted mother, an intelligent mistress of her family. The aim is to *arouse all their intellectual powers* and to give them a development sufficient to enable them to attain the object of their existence under the circumstances which their sex imposes upon them. The education of girls is carried on both at home and in the school; to the family belongs more particularly the duty of preparing them for their future domestic rôle, and to the school that of cultivating the mind."

Froehlich, assisted by a corps of efficient teachers, has instructed a large number of pupils who disseminate his principles and methods in Germany and Switzerland.

Maria-Alexandrovna, who had undoubtedly aided the development of girls' schools in her native country, Hesse-Darmstadt, instructed Professor Wychnegrobski to go to Germany in order to study those institutions, and, his report being favorable, work was commenced. The advisor of the empress had to contend with financial difficulties; he found that the boarding-schools were self-supporting, and assumed from that that the girls' day schools, while they would be an improvement on the others, would not cost more in proportion: a supposition which experience proved false. The tuition fees in girls' gymnasia are not sufficient to meet the enormous expenses for salaries and apparatus in a school of that character, if it is worthy of its name. In 1872, the excess of expenditures over receipts for the gymnasia of St. Petersburg, ranged from \$3,000 to \$6,000 each. The deficit is met by funds of the department of the Empress Maria, or fourth section, as it is named. Under the influence of first illusions it is difficult to accustom one's self to this constant demand for money. Up to the present time there is no regular budget for girls' schools dependent

upon the fourth section ; for every new undertaking or unforeseen expense, the department is drawn upon.

The Minister of Public Instruction is not willing for his part to be behind-hand. Under his auspices, and more especially since the law of May 24th, 1870, 54 gymnasia and 108 pro-gymnasia have been opened. To these should be added two high-schools, whose standard approaches very nearly that of the gymnasia, and twenty-two secondary schools, nearly corresponding to the pro-gymnasia. This forms a total of 186 institutions in which 23,400 pupils are instructed, and from which 1,000 graduate annually.

Some of the gymnasia, and particularly those situated in the German, Lithuanian, and Polish provinces, are supported entirely at the public expense ; the government does not spare money when there is an opportunity of spreading the Russian language or ideas in the frontier provinces. There are nine girls' gymnasia in the university district of Varsovie, each of which has a subsidy of \$10,500. The total sum for the support of the 54 gymnasia and 108 pro-gymnasia, including the twenty-two secondary schools, is \$468,075 annually. The government furnishes only \$37,500. The remainder is raised through grants by cities, provincial authorities, and tuition fees. These institutions are growing ; in the district of Kazan the number of pupils has increased from 3,224 to 6,776. But let us return to the gymnasia depending for support upon the fourth section.

Of the female gymnasia, which are under governmental supervision, six are situated in St. Petersburg. St. Marie, the oldest and largest, has 605 pupils, the others less. To these six should be added the pro-gymnasium of the Nativity, which differs from the others in that it has not the three higher classes. At Moscow there are four gymnasia, at which 1,275 girls are taught. In addition to these in St. Petersburg and Moscow, there are fifteen of these institutions in the various capital cities. Eight are in the western part of the empire ; the fourth section, probably being inspired by the same motives as those of the Minister of Public Instruction, to multiply schools in the western Russian provinces, i. e., Poland. The inhabitants of the interior constantly complain that the border provinces absorb all the

educational budget. The majority of the provincial institutions bear the name of Maria, an honor as well to Maria-Feodorovna, whose liberality endowed them, as to Maria-Alexandrovna, who founded girls' schools in Russia.

If the establishment of the first institute at the time of Catherine II seemed a hazardous experiment, what shall be said of the effect produced fifteen years ago by the appearance of the gymnasia? The institutes were at least half convents; for, although instruction was given by laymen, the interior administration did not differ greatly from that of a cloister. They had the conventual life, the strict rules and vigorous boarding-school system, and occasionally they were placed in ancient cloisters or under the sacred shadow of a temple. The girls' gymnasia, on the contrary, were founded upon the principle of a day-school. These undertook the *instruction* of the children: for their *education* they called in the aid of the family. So that in Russia, where, until the time of Peter the Great, women were condemned to the seclusion of the *terem*, girls may now be seen, as in Germany, mingling with the crowd and frequenting the public schools. A second principle of the female gymnasia, none the less important, is that they are open to girls of all ranks and religions. In a country in which class-prejudice is not yet extinct, such an innovation could not fail to create a sensation; how could a privy counsellor bring himself to let his daughter frequent a school where she would meet girls whose fathers had not obtained the eighth rank of *tchin*, which confers hereditary nobility? Would even the *tchinovik* of the tenth or eleventh rank be flattered to see his children associate with children of merchants and mechanics? Lines were sharply drawn among the merchants as well: there are members of the first and members of the third *ghilde*, and they like to "keep up their dignity." But, aside from these miserable little vanities, was it not to be feared that girls would make bad associates at school? Ought not the priests to warn parents against this legalized mixing of religions? Finally, until then only that had been taught which was regarded as indispensable for taking charge of a house. The new teachers were more ambitious; they proclaimed that a woman was not of necessity simply

a wife, mother, or house-keeper. Before fitting for any *special* work, all her intellectual and moral faculties should be developed as far as possible.

The teinpest raised among us (in France), five or six years ago, by an attempt much more moderate, will readily be remembered—an attempt to secure to girls the educational opportunities enjoyed by their brothers. The affair passed off more quietly in Russia: no violent controversies, no religious pamphlets; the clergy remained in the back-ground, and did not take part in the war to “defend and avenge the orthodox Russian woman.” The movers worked slowly, endeavoring to remove prejudices and quiet conscientious scruples, and to overcome the vanity of the parents; and they profited by the faults and follies committed by the violent partisans of the movement. The wishes of many of these misguided persons went beyond the possible and desirable. Some of these, in their exaggerated passion for free science and female independence, left home to live by their own resources, formed student societies, donned an odd dress inappropriate to their sex, wore short hair, blue glasses, and students’ caps. Even the timorous did not hesitate to talk of *nihilisme*, which in Russia replaces *materialism*, in the amenities of polemics. The police, who did not know how to put the finger on this unseizable doctrine, now found themselves in an easier position, since *nihilisme* had assumed a costume, and a chase began for short hair and blue glasses. Many a person, very nearsighted and very honest, suffered from the effect produced on the police by these glasses. At length the movement for founding girls’ schools, a movement led by serious minds seeking female emancipation in other things than in vain theories, encouraged by government, and sustained by public opinion, gained so much approbation and became so extended, that all discords and eccentricities were borne off and swallowed up in the current. Young Russia had sown her wild oats, and over that ground the new nation advances with a firm, bold step, inexperienced but irresistible.—*Revue des Deux Mondes*.

HENRY WADSWORTH LONGFELLOW.

HENRY W. LONGFELLOW is, by his verse, brought nearer the hearts of those who speak the English language, than any other living poet. His words stimulate many who carry them always in memory without any distinct knowledge of their source.

His "Psalm of Life" and "Excelsior" are printed and reprinted continually. They are repeated by school-girls as the pleasantest part of their tasks: they are declaimed by school-boys from Maine to California in the public and private schools of the land; they are quoted and made models for parodies again and again.

The mother reads his lines on "Resignation" over the empty cradle, or by the new-made grave, deriving from the poet the sweet Scriptural assurance that

"These severe afflictions
Not from the ground arise,
But oftentimes celestial benedictions
Assume this dark disguise.

We see but dimly through these mists and vapors;
Amid these earthly damps
What seem to us but dim funereal tapers
May be Heaven's distant lamps."

From him the strong young man as he works, reads, and his heart responds to the sentiment

"That he who lingers longest here
Knows most of care.
Thy goods are bought with many a groan,
By the hot sweat of toil alone,
And weary hearts;
Fleet-footed is the approach of woe,
But with a lingering step and slow
Its form departs."

Perhaps he is ready to despair, when the poet calls to him again and says:

"Let us then be up and doing
With a heart for any fate,
Still achieving, still pursuing,
Learn to labor and to wait!"

And the old man sees the experience of his life marked out as he looks at "The Old Clock on the Stairs," and as there are brought before him in review the joys and griefs of other days; the "groups of merry children," the dreaming "youths and maidens," the bride, and all those others who are "scattered now and fled," and with slow-beating heart he joins in the refrain

"Forever there, but never here!
The horologe of Eternity
Sayeth this incessantly,—
Forever—never!
Never—forever!"



The maiden too, loves to linger over the Acadian tale of "gentle Evangeline," child of Benedict Bellefontaine, beloved of Gabriel Lajeunesse. She walks with them through the "forest primeval," sits with them "on the settee close by the chimney-side," trembles with them as they hear of the coming of the English ships, and as she sees them,

"Waiting with anxious hearts the dubious fate of to-morrow."

She follows them both in all their romantic wanderings, and feels that she too is in that alms-house on the banks of "the Delaware's waters."

She sees Evangeline as a reality at the moment on the Sabbath morn in the pestilence-struck city, when

"Distant and soft on her ear fell the chimes from the belfry of Christ's Church."

It is not in the imagination merely that she hears the cry "Gabriel! O my beloved!" and she thinks she sees Evangeline kneeling beside him, and kissing his dying lips as his life

"Suddenly sank into darkness

As when a lamp is blown out by a gust of wind at a casement."

She too, meekly bows her head, and murmurs, "Father, I thank thee!"

The traveler returned from Spain, or England, or Belgium, or from the countries of the north, having passed through the dangers of "the tempestuous wave," loves to stand again "in the market-place of Bruges;" he loves to

hear the great bell of Ghent responding o'er lagoon and dike of sand.

"I am Roland ! I am Roland ! there is victory in the land !"

The "students of Alcalá," the "gentlemen of Madrid," are friends and acquaintances, and he enters into the poet's feelings as he reads of Preciosa, Victorian and Bartolomé.

The New-Englander rejoices that the poetry in the lives of those who made Plymouth Rock "the corner-stone of a nation," has found a fit interpreter, and even that the "New-England Tragedies" do not remain unsung.

The man of letters reads his version of Dante's epic with a new pleasure, and the American cannot resist the unexpected charm which our truly American poet throws around the romances of the prairies, as he weaves the fortunes of Mudjekeewis, Nokomis, Hiawatha, and Minnehaha into enchanting verse. Listen to the poet's appeal :—

"Ye whose hearts are fresh and simple,
Who have faith in God and Nature,
Who believe, that in all ages,
Every human heart is human,
That in even savage bosoms
There are longings, yearnings, strivings,
For the Good they comprehend not,
That the feeble hands and helpless,
Touch God's right hand in that darkness :
Listen to this simple story,
To the song of Hiawatha."

In short, every class finds in the verse of Mr. Longfellow some word that goes to the heart, and, for this reason, he is more loved than any other living poet.

Mr. Tennyson touches the imagination and pleases the intellectual man, but Mr. Longfellow possesses that greater power of true genius whereby, while the scholar praises, the man, woman and child of every degree and social position takes him to his heart.

Mr. Longfellow is a native of Maine, having been born in Portland, February 27, 1807, "in an old square wooden house on the edge of the sea."

After receiving his preparatory education, he entered Bowdoin College, at Brunswick, and was graduated in the

class with Nathaniel Hawthorn, in 1825. While an undergraduate he wrote what are styled his "Earlier Poems," among which are the "Hymns of the Moravian Nuns of Bethlehem, at the consecration of Pulaski's Banner," the "Burial of the Minnisink," "The Spirit of Poetry," and "An April Day," which gave indication of the career before him.

After graduation, he entered the office of his father, the Honorable Stephen Longfellow, for many years an eminent member of the Bar of Maine, but being soon appointed by his Alma Mater professor of Modern Languages and Literature, with the privilege of spending some years abroad for the purpose of study, he relinquished the law for what has been his congenial life-work.

In 1826, he sailed for Europe, and occupied three or four years in study and travel in France, Spain, Italy, and Germany, returning in 1830 to the active duties of his chair, which he performed for the next five years. While thus occupied, Mr. Longfellow gave the public some of the fruit of his foreign studies in reviews, translations, and other contributions to American literature.

Among these was an essay in the "North American Review" on the "Moral and Devotional Poetry of Spain," which included his translation of the popular memorial poem of Don Jorge Manrique, entitled "Coplas de Manrique," from which our second extract above is made. This was afterwards published in a volume with translations from Lope de Vega, Francisco de Aldana, of Spanish poets, and with others from the French, Danish, and German. Among these are the well-known lines, "Beware!" which, having been set to music, are popular in the drawing-room, and at concerts. In prose he published "Outre Mer; a Pilgrimage beyond the sea."

In 1835, Mr. Longfellow was appointed to succeed Mr. George Ticknor, as professor of Modern Languages and Literature at Harvard, and passed two years in travel through Europe, as a preparation for the new duties. Mr. Longfellow has since resided in Old Cambridge, in the former headquarters of General Washington, which has been described in fitting terms by Mr. Curtis in the "Homes of American Authors."

It was from this home that he sent out in 1839 his prose romance of "Hyperion," and the "Voices of the Night." The latter included his "Psalm of Life," "The Reaper and the Flowers," and "The Footsteps of Angels."

These were followed in 1841 by "Ballads and other Poems," among which are "The Village Blacksmith," "God's Acre," and "Excelsior."

In 1842 his "Poems on Slavery" were issued, almost immediately upon the death of the lamented Wm. E. Channing, to whose great and good memory they contain a hearty tribute; and in 1843, the "Spanish Student" followed.

In 1845, Mr. Longfellow gathered into one large volume specimens of European verse under the comprehensive title of "The Poets and Poetry of Europe," a collection which he revised and enlarged in 1870.

In 1846, "The Belfry of Bruges, and other Poems" appeared, a collection which includes "The Old Clock on the Stairs," "The Arsenal at Springfield," and other favorite pieces. It closed with "The Curfew"

"Solemnly—mournfully,
Dealing its dole."

After these *Evangeline* appeared in 1847; *Kavanagh*, a novel, in 1849; "Sea-side and Fire-side," from which our first quotation is taken; "The Golden Legend" in 1851; "The Song of Hiawatha" in 1855; "The Courtship of Miles Standish" in 1858; "The Tales of a Wayside Inn" in 1864. The translation of Dante's great epic was published in portions, beginning with the "Divine Comedy" in 1867; "The New England Tragedies" in 1868; "The Divine Tragedy" in 1871; and "Three Books of Song" in 1872.

In 1854, Mr. Longfellow resigned his professorship in Harvard University, and has since devoted himself to his favorite pursuits, in his charming home, upon which it does not become us to lift the curtain.

A review of what he has added to the literature of the world, displays a rich variety, and throughout the whole we observe the culture of the scholar, the delicacy of the

poet, the romance inspired by traditions of the dim past, the love for the noble and pure in history; the patriotism of the true American; the admiration of the strong man for all that was good in the Pilgrim Fathers of New England; and the sympathy, charity, and Catholicity of the Christian.

America has a right to be proud that such a writer is the most popular and best beloved poet of her language, for the fact is in itself a tribute to the purity of the hearts that throb underneath the materialism of a mechanical age, and inspire the lives of the vast body of the people in spite of the rampant sensualism, materialism, and infidelity of our times.

ARTHUR GILMAN.

THE STRUCTURE OF THE APPALACHIAN ZONE.

PART THIRD.

IN the extreme southeast, as in the Blue Ridge and its extensions northeast and southwest, the curves are folded and pushed over, as appears in figure I, in which each line represents a single stratum. Here the strata have not only been thrown out of their normal horizontal position and curves, but they have been so pushed over



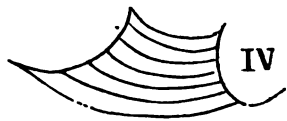
that the northwestern portion of each stratum has been folded under the southeastern portion. Following up the matter in a northwestward direction, we soon find the form changing so as to resemble figure II, where the northwestern side is no longer thrust under the southeastern, but is vertical, or nearly so. Farther toward the northwest the steepness of the slopes diminishes, until the curve is almost symmetrical, like figure III, where



the northwestern slope is but little steeper than the southeastern. The most northwestern of the curves belonging properly to the Appalachian chain passes through

eastern Ohio in a northeast and southwest direction, and crosses the Central Ohio Railroad about seventy miles west from the Ohio river. The strata there have been thrown out scarcely two hundred feet. These curves vary not only in shape but in extent. At the southeast the same stratum may describe several curves in the course of a mile, such as may be seen on a small scale in many of the street-openings through rock on New York island, but as westward, the curves become broad and gentle, their sides sloping almost imperceptibly, so that from axis to axis many miles may intervene. In the Blue Ridge there are no northwestern dips, the strata are folded as in figure I, and all dip to the southeast. In the Middle Mountain Division the angle of dip to the northwest is first 90° , then diminishes to 60° and to 30° . Along the eastern portion of the Alleghany division the dip is 25° , but diminishes rapidly westward, so that at the Gap of Cheat in Laurel Hill the angle is but 3° , while on the final curve at the northwest it is little more than 30° . Exceptions to this order sometimes occur, such as curves with the southeastern slope steeper than the northwestern. In some cases these are difficult of explanation, in others they are easily understood. A satisfactory understanding of them all, however, is impossible without a more thorough knowledge of details than that we now possess.

From what has been said, it will be seen that a normal mountain and its accompanying valleys are merely the curves of the strata, like the surface of a sea. Such is the case with most of the ridges in the first or Blue Ridge and in the third or Alleghany Mountains. But in the second or Middle Mountain Belt, one not unfrequently sees a mountain of moderate elevation, having a structure like figure IV. This structure is clearly the bottom of a curve connecting two mountains.



But where are the two mountains? In a normal mountain the strata slope away from the central axis; in a valley they slope to it. But here we find the strata of the mountain sloping toward the axis, while the strata in the adjoining valley slope away from their axis. It is evident then that in place of the mountains we have valleys and a mountain in

place of the valley. The mountains must have been removed by some agent of enormous power. The valleys of Ohio and Northwestern Pennsylvania show a similar origin. They exhibit no curves. The strata dip in the same direc-



tion on both sides of the valley, proving that they were originally continuous, as represented by the dotted

lines in figure V.

There is but one agent in operation upon the earth's surface competent to effect so important a modification of things: and that agent is running water, an agent so powerful, that its influence is almost incredible.

The strata composing the earth's crust are of unequal hardness. Compact limestone or sandstone often overlies soft clay shale. Water trickles through crevices in the limestone or percolates through the pores of sandstone and reaches the shale below, which, though not permitting the flow of water through it, still offers no obstacle to a flow upon its surface. A channel is soon made between the layers of unequal hardness, along which the water flows uninterruptedly, converting the adjacent portions of the shale into mud, which is readily removed. This process continues until a cavity is formed, so large that the overhanging roof yields to the force of gravity and falls. A fine illustration of this is found at Niagara Falls, where portions of the limestone shelf annually break off and fall into the abyss below. In other cases where the strata vary little in hardness, running water does little to initiate disintegration, and the work is performed almost entirely by the freezing of water in crevices. In solidifying, water expands one-ninth, and in so doing, exerts tremendous force, as will appear from the heaps of *débris* at the foot of the Palisades on the Hudson.

Thus by running or freezing water, or by both combined, the harder strata are broken and thrust out of their place. The finer material is readily washed away by the little streams in their operations upon the hill-sides. But when these are swollen by heavy rains, their power is vastly increased, so that they can move large stones along their

beds, and carry gravel in suspension. Thus they not only transport material, but in the very act of transportation erode their bed and sides. I have seen a stream, commonly only three feet wide and two inches deep, but having a fall of more than three hundred feet per mile, swollen to an impetuous torrent by a rain-storm. In forty-five minutes it had accumulated, at a spot where its flow was checked, enough sand, gravel and large stones to cover nearly fifty thousand square feet to a depth of eighteen inches. After the storm was over, the stream slowly excavated for itself a new channel through this débris. In like manner, it had by long action excavated a deep valley two miles long, and flanked by high hills on either side.

This erosion and excavation is abundantly manifest in the valley of many of our large rivers. Those of you who have sailed up the Connecticut river, have no doubt noticed the succession of terraces upon its banks, forming as it were a gigantic stairway from the river bed to the hill-tops. Similar terraces are observable along the Ohio and its tributaries. No observer doubts, as he views the level surface of the first terrace, that that was originally the river bed, and that the present channel has been excavated in it. If he question the owner of the land, he is confirmed in his belief, for he ascertains that the farmer there ploughs up shells precisely like those now inhabiting the river. Should any one examine these shells, fresh-looking, and still retaining their brown epidermis or skin, he would not regard them as mere freaks of nature, any more than he would so regard the handsome shells which adorn our rooms. He would ridicule the idea, for he would entertain no doubt that they had been inhabited. If now our observer ascends the steep escarpment and mounts the second terrace, he will find a soil similar to that of the first, and the same kinds of river shells, only less fresh-looking. Such will be his experience to the top. On the third terrace of the Monongahela, three hundred feet above the present low-water line, I have found fresh-water shells, differing in no wise from the species now inhabiting the river. The conclusion is irresistible. At one time the river flowed at the level of the topmost terrace, and during a succession of gradual changes in

elevation of the land, cut its way down to its present level, forming a valley, wide or narrow, according to the structure of the country through which its flows. The lower terraces, being of more recent origin, are usually quite distinct, whereas the upper ones are frequently so gashed by rivulets as to be traceable only with much difficulty. Perhaps the most remarkable example of unmistakable erosion is found in the wonderful cañons of the Colorado, so fully and satisfactorily discussed by Dr. Newberry. The great cañon of the Colorado is three hundred miles long, with almost vertical walls from three to six thousand feet high. These are formed of granite, limestone and sandstone. Each tributary stream has its own gorge, entering the great cañon at its level. The arrangement of these is such that no theory of fractures will account for them. Each stream by continual running wore out its own cañon.

But one may ask, where is the vast mass of material that filled the Ohio Valley to a height of six hundred feet above the present low water line, or that made up the mountains now missing east of the Alleghanies? Bear in mind that water moving nine hundred feet per hour can bear fine clay; at eighteen hundred feet fine sand; at one mile per hour, it will transport small stones; at ten miles, it will move blocks weighing five tons. Remember also, that the transporting power of ice is almost unlimited. On the St. Lawrence, the ice has been known to drag out heavy piles, loaded with huge rocks, and to carry the whole away to the sea. Keeping these facts in mind, there will be no difficulty in tracing up this missing material. One example being typical of all, let us examine the course along the waters of the Ohio.

Beginning at the head-waters of Cheat River, we study carefully the character of the rock prevailing there. We note its color and the fossils it contains, and take this as our guide. This stream, like its fellow, the Monongahela, is rapid, with a fall of from two to five feet per mile, and subject to frequent and tremendous floods. During each flood much material is torn from its banks and thrown into the stream to be pushed along. Now if we follow this river to its junction with the Monongahela near the Pennsylvania line, we find fragments of the fossiliferous sandstone of its

head waters scattered along the banks everywhere, and mingled with fragments of every kind of rock to be seen in the river cliffs along the whole course. Descending to Pittsburg, we meet the Alleghany and the two rivers forming the Ohio flow together. Passing down the Ohio to the Ohio State line, we find gravel terraces lining the river banks, and we learn by borings that this mass of gravel continues to a depth of two hundred feet below the river bed. Let us examine this enormous accumulation of stones, varying in size from fine sand to six inches in diameter. Here we find samples of every kind of rock to be obtained along the Cheat, Monongahela and Alleghany rivers or their tributaries, from their sources to their junction with the Ohio. The sandstone which we saw on the head waters of the Cheat River is here in quantity. Here in this enormous mass of gravel, one to three miles wide and two hundred and fifty to three hundred feet deep, we find a large proportion of the material torn from the western slope of the Alleghany Mountains, in order to form the wondrous network of valleys. But this accumulation is only of the coarser material, deposited along this portion of the Ohio Valley, because here the river loses much of its velocity, and is unable to push such pieces along. The finer material has gone further, and has aided in forming the enormous delta of the Mississippi, extending southward from Cairo, Illinois, and including much of Mississippi, Arkansas and Louisiana. In like manner, the material denuded from ranges lying east of the Alleghanies has been swept off to make up the alluvial plains of the coast, or has been carried off into the ocean.

One remarkable feature of this zone still remains unnoticed, the extent of its faults. These are cracks in the earth's crust, on one side of which the strata are thrown up or down to an inch a foot or even a mile or more. In the English coal-fields these are of frequent occurrence, and are the source of much annoyance, as a coal bed is thus abruptly cut off in such a manner sometimes that the miner is at a loss to determine whether the missing bed is above or below him. The ninety fathom dyke of New Castle, where one portion of the bed lies five hundred and forty feet below the

level of the other, is one of the most remarkable faults in England, but is dwarfed into utter insignificance by those shown in the Appalachians. Lesley describes an enormous fracture west from Chambersburg and near the Maryland line :

“The western side of the anticlinal cove canoe has been cut off and carried down at least twenty thousand feet into the abyss, along a fracture twenty miles in length: the eastern side must have stood high enough in the air to make a Hindoo koosh; and the materials must have been swept into the Atlantic by the denuding flood. The evidence of this is of the simplest order and patent to every eye. The highest portions of the Upper Silurian (For. VIII.) wall against the lowest portions of the Lower Silurian (For. II.) The thickness of the rocks between is of course the exact measure of the downthrow; which is therefore twenty times as great as the celebrated Penine Fault in England. Yet a man can stand astride across the crevice, with one foot on Trenton limestone and the other on Hamilton slates, and put his hand upon some great fragments of Shawangunk grit (IV.), caught as it were falling into the chasm, held fast in its jaws as it closed, and revealed by the merest accident of lying suspended in the crack just where the plane of denudation happened to cut it.”

In the faults of Southwestern Virginia, where faults are the rule, the downthrow is nowhere so extraordinary as in the one just mentioned, seldom exceeding five thousand or six thousand feet. Yet these are no less wonderful, owing to their greater extent longitudinally. The Brothers Rogers describe one, one hundred miles long, and exhibiting a vertical dislocation of nearly six thousand feet. In this enormous fracture we find large masses of the intervening formations entrapped in the crevice and forming small knobs or hills. Near the Tennessee line it shows that not only have the rocks on one side been thrown down, but those on the other side have been subjected to a lateral thrust, so that a seam of coal actually underlies a bed of limestone, whose normal position is several thousand feet below it. These faults occur usually in connection with the folded flexures represented in fig. I, and evidently resulted from the enormous tension to which the rocks were subjected.

A FEW REMARKS ABOUT THE SYSTEM OF KINDERGARTEN EDUCATION.

THE attention of the general public to the purposes and methods of Fr. Froebel's system of Kindergarten education has at last been excited to a sufficient degree to render that system in the eyes of many important in a national point of view.

The German American Teachers' Association, at their last annual convention, held in Hoboken, in 1872, commended the general introduction of that system to the National Teachers' Association, held in Boston in the same year. The latter body appointed a competent committee to report to the National Teachers' Convention to be held in Elmira, N. Y., this year, an explanation of the system and a plan of concerted action toward its introduction.

The Elmira Convention, which promises to be the largest and most influential gathering of American teachers ever held, will also have to decide on the adoption of Froebel's system and the steps to be taken to that end.

It seems therefore necessary that we should prepare our readers, by a succinct statement for the discussion there to be expected, that they may intelligently judge of the merits of the system itself.

An educational scheme of whatever kind cannot be rightly judged from its theory, however philosophical and reasonable, but only from its practical workings, compared with the theory.

It is, however, a particular misfortune of Froebel's system that it has, as yet, been presented to the American public at large in its theory only, not in its practice. The books and writings containing that theory* seem to be well adapted,

* The books on the Kindergarten system of education in the English language, now before the public, are the following:

1. Miss E. P. Peabody's and Mrs. Horace Mann's "Kindergarten Guide." New York: J. W. Schermerhorn & Co.

2. Edw. Wiebe's (translation of M^r. Goldammer's) "Paradise of Childhood." Springfield, Mass.: Milton Bradley & Co.

3. Adolf Douai's, "The Kindergarten." New York: E. Steiger.

4. "The Child, its Nature and Relations," by Mathilda H. Kriege. New York: E. Steiger.

Besides some remarks of Mr. John Kraus in the Reports of the Department of Education in Washington, D. C., may be consulted with profit.

by complementing each other, to propagate a correct understanding of what the system is and purports; but there are no institutions, on a sufficiently large and perfect scale, to exemplify its practical benefits and results in general, and to demonstrate experimentally all its merits.

There are quite a number of so-called Kindergartens in our country; but many of them are of a spurious kind, undertaken by private teachers who are little or not at all acquainted with the system, and who "humbug" the public with a new "attraction," by calling their non-descript schools for young children, Kindergartens, while they are intended for recruiting depots for pupils for their elementary classes. There are also a number of genuine Kindergartens, not all of equal value, presided over by persons who have learned the art both practically and theoretically in Germany, or from immigrated German Kindergarteners. But none of them, to our knowledge, commands all the means necessary for a complete school of that kind. A majority, besides, of those, which are thrifty and living realities, are German-American, kept in two languages, so that visitors who wish to study their doings, if they do not understand both English and German, cannot fully appreciate them; a minority, kept in the English language alone, are not well patronized and cannot, from this very reason, afford to exhibit the system to full advantage. The only Normal School for future Kindergarteners left in existence is a German-English one, kept by the subscriber, but it cannot find English speaking pupil-teachers enough to efficiently propagate the system—although it has furnished a majority of the teachers for the Kindergartens now in thrifty existence; while there is a scarcity of native German-American women willing to learn the art. The Normal School for Kindergarten teachers, which was kept in Boston for one year and a half, no longer exists.

It is therefore so much the more remarkable that there is among all Pedagogues—a class of men otherwise little harmonious in their views—a perfect unanimity about the excellence of a genuine Kindergarten education. If now and then a teacher is found to grumble over, and to find fault with the system, it can in every case be proven that he has

not yet seen it in genuine working order. Those once thoroughly acquainted with it are its most zealous advocates. And this fact at once explains how it is that it has outlived all the persecutions that tried to strangle it in its cradle (in Prussia and some other German states it was forbidden for twenty years, and generally in Europe it has met with opposition on the part of governments and churches), and overcome the solid mass of indifference with which all innovations upon educational systems are hampered.

Education may very properly be compared to a feeding of the pupil's mind on the part of educators, and to mental assimilation on the part of the pupil. Everybody knows that, if the proper food be administered to children from their infancy up, normal health and the vigor of their bodily system will result, and all diseases may be prevented. The term "proper food" includes 1. Its adaptation to the wants of the body ; 2. Its palatableness, which excites an healthy and normal appetite ; 3. Its correct quantity, which should supply just enough to replace the worn-out particles of the tissues, and a little more for the sake of additional growth, but never more than a healthy appetite wants. The term includes also pure air for breathing, cleanliness and the proper outer temperature of the body, which is preserved by adaptation of the clothing, and proper exercise of all the limbs (gymnastics in the most general sense), because air, light, heat, water, exercise and clothing modify the workings of the food in the system. Now, Froebel's system of education is a thoroughly philosophical and practical feeding of the mind according to the analogy of bodily feeding. It starts from the principle, that all mental disease may and must be prevented, and the normal health and vigor of the mind in everybody produced by adapting the mental food to the wants of the child from its first infancy up, by the palatableness and correct quantity of the food, and by administering such surroundings, such a mental atmosphere to the growing child as to secure the normal workings of the food.

Mental (and moral) assimilation should always be pleasurable to the pupil. If it be so from the very first months of life, a healthy appetite for mental food will be created.

which will, even in after life, always satisfy itself, and by the pupil's own activity save the greater part of the educator's efforts. If it be so varied as to offer food for all the several faculties of the mind, adapted to each in kind, yet at the same time so simple as not to overstimulate any of those faculties at the expense of others, there will be a normal development—which may then be had in every individual. There is no inborn stupidity, no inherited viciousness, no transmission of ready talents, virtues or gifts of any kind ; all there is transmitted are : organs in the body, susceptible of a more or less easy development, according as the mental food is more or less adapted to them.

As every child born in the enjoyment of all its senses may be developed into a true man, that is to say, a man of peculiar excellence in some one branch of human achievements, and of a generous culture of all his moral and mental faculties ; it is evident that mankind loses an inestimable amount of talents and virtues, which now-a-days remain uncultivated. They remain so simply because they are not treated to their proper food in their period of youthful freshness, and therefore fall asleep, never to reawake, at least not to their full vigor. Other, perhaps the more animal, faculties will be developed at their expense.

This is in the fewest possible words the philosophy on which Froebel's system of practical means of education for all mankind is based, and the correctness of which has been corroborated by a most abundant experience of educators during the last quarter of a century. An incredible amount of talents and virtues is developed through a sufficient course of Kindergarten, talents and virtues which, without it, could never have grown into live reality. Children utterly spoiled by the foolish indulgence of their parents, half-idiots grown up in the streets of large cities and in vicious neighborhoods, and dunces coming from solitary nooks and surroundings that can not furnish any variety of impressions, have been not only morally reformed, but mentally regenerated, always provided they were not too old for it. A class of pupils prepared for the primary school, through a two or three years course of Kindergarten, is the sincere pleasure of their primary teacher. There is

no "hard case," no incorrigible youth, no dunce among them. They advance most rapidly, though, of course, not all with equal ease in every single branch of study; and no mechanical means of discipline are needed to keep them steadily at work. A genuine Kindergarten will never set down a child as stupid, or thoroughly vicious, or hopeless in any particular branch of study or work, if the child be young enough. And what teachers habituated to the prejudices of their class will hardly believe: to-wit, that every child may become a good singer, gymnast, speaker, draftsman, modeler, geometer, mathematician, actor, and the like, is, by the experience of genuine Kindergarteners, borne out as undeniable.

The better half of an education of this kind may be done in the domestic circle, chiefly by a good, well-educated mother, provided she be acquainted with the necessary variety of playful occupations for children, which Froebel has systematized. He has not invented them; he has studied the plays of many excellent mothers with their babies, and united them into an organic whole, no part of which is superfluous, or without a deep significance. But as only very few mothers will be able to practice all the plays, as they should be, before they themselves have gone through a course of Kindergarten exercises, as pupils in school, and another course of such exercises as pupil-teachers in Kindergartens; the latter institution becomes necessary to the ends mentioned, and will always be an indispensable supplement to even the most excellent domestic education.

The Kindergarten proper receives children of from three and a half or four years of age, and prepares them for the primary school up to six or seven years of age. It is a sufficiently large room or hall, connected with a garden (or an imitation of a garden). It bridges over the great chasm that lies between the methods of domestic and primary school education, being domestic, a kind of enlarged family, and at the same time a school in so far as teachers, persons educated for the vocation of forming the youthful mind and body, guide the exercises, which are all playful and highly agreeable.

It is one of the *criteria* of a genuine Kindergarten, that every one of its occupations should be pleasurable, and that all the little inmates should at all times be made happy, and return home full of spirit and life, should be most regular attendants and impatient to be at school again. But it is just as indispensable a requirement, that every play should result in useful and beautiful work, that discipline should be easy of maintenance without any command in the strict sense of the term, and that all the mental, moral and bodily powers of the pupils should visibly grow.

It follows that a genuine Kindergartener cannot have too much of talents, interest and preparation for her most responsible vocation. Yet it is a fact that far more young women can be developed into genuine Kindergarteners than into primary teachers such as they should be. The work of a Kindergartener is fascinating and invigorating, and woman's nature is eminently fit for it, if the right kind of preparation is administered, and a good general education has preceded. The more mechanical part of her work may be rapidly learned—within a few months; the more philosophical part will be gradually acquired by experience, especially under the superintendence of able teachers from the beginning, if the pupil teacher be intelligent, educated, of a cheerful and vigorous mind, and fond of children. A good singing voice is indispensable.

It would lead us too far for this necessarily short explication to go into a detailed description of all the various exercises of the Kindergarten. They are well enough described in the several English books now before the American public, the titles of which may be found in our foot-note.

In conclusion, we would say that the Kindergarten is a more needful complement of national education in our country than in any other. Such at least is the unanimous opinion, not only of the German Teachers' Association of this country, but also of the members of the committee on Kindergarten of the National Teachers' Association—among whom are names of a national reputation, such as J. W. Dickinson, of Westfield, Mass., W. T. Harris, of St. Louis, Mo., John Hancock, of Cincinnati, O., and others.

Our own country, more than any other, needs a fully and truly educated body of citizens of both sexes, a truly democratic education: nay, the latter is the only and very means toward preserving our model political institutions. If the ignorance and servile proclivities, imported in ever increasing proportions from the old countries, are not to ruin within a few decades these our institutions, we must have a national education calculated to inaugurate a higher humanity, which can not be raised in the old English *routine*-fashion, nor by patching its old worn-out garment with a few improvements of methods.

Newark, N. J., May 27th.

ADOLF DOUAI.

GEOGRAPHICAL NOTES.

UNITED STATES.—Professor Hayden's explorations during the present season will embrace the mountainous districts of that part of Colorado lying to the west of Denver, and that part of Utah which lies east of Green River. It is expected that here may be found the highest peak yet measured in the United States. The mineral wealth of the region will be a special object of research; its resources for pasturage are already known to be remarkable.

—The Yellowstone River has been found navigable from its mouth to Powder River, by Maj. Geo. A. Forsyth, of Gen. Sheridan's staff.

—Lieut. Geo. M. Wheeler's expedition, now engaged in exploring New Mexico, eastern Arizona and Utah, and southern Colorado, consists of 175 persons, the chiefs being nearly the same as last year. The survey of 1872 will be supplemented eastward. This is Lieut. Wheeler's fourth season (1869, 1871-3), and among the trophies which he has collected in Washington during this period are, according to a *Tribune* correspondent, the following:

"Specimens of copper, iron, lead, and cinnabar; salt in crude

masses, just as taken from the mountain sides, some of the specimens clear as crystal, and others snow-white and daintily chiseled, like stalactites depending from the roofs of caves; sulphur in the same state, flaming as the breath of a volcano; natural magnets of extraordinary weight, to which flutter and cling needles, tacks, nails, on hand for experiment; specimens of fossil wood, remarkable likewise for its weight, and finely-veined as verd-antique marble; opal pebbles, showing, when broken open, shifting iridescent hues, needing only to be polished to possess the luster of a jewel, and in which, it is said, are sometimes found—imbedded in the body of the stone—genuine opals of great beauty and value; precious stones of various kinds; garnets, red, white, and yellow; azurite, malachite, azalis, chalcedony, opal, sapphire. One imagines, in looking at these wonderful specimens, that Colorado is the veritable diamond valley to which Sinbad was transported in recompense for his trials."

—Mr. Stephen Powers, the intelligent correspondent of the *Railroad Gazette*, has been traveling to the "front" of the rapidly advancing California and Oregon Railroad in the upper Sacramento Valley. In place of the Irish shanties commonly seen at the East, he says that

"In approaching a railroad front in California, the traveler runs a long gauntlet of Chinese encampments, and it is a strange and interesting spectacle which they present. They always prefer to camp beside a creek or river, but if they are compelled to stop on the open plain, they have their ovens dug in the iron-hard earth wherever there is a bit of a shoulder in the surface. The interior of their small tents is very neatly kept, with their beds and mats all of bamboo spread on the ground. There are numbers of wash-houses, which consist simply of tents erected among the willows beside a pond, or sheer in the dry bed of the creek. The Chinese have learned well from Americans the art of following up a railroad front with all manner of saloons, sutleries, gambling dens, strange women, and other concomitants of a great railroad work. At one place there is quite a Mongolian village of camp-followers by the roadside, formed of improvised board-shanties standing right amid the chapparel—all Chinese. The gorgeous and flaunting red letters of the signs set up on these 'deadfalls' are full of poetry and the most beautiful morality, as 'Balcony of Joy and Delight,' for a restaurant; and 'Overrunning Abundance,' or 'Heavenly Felicity,' or 'Riches Ever Flowing,' for a gambling den; and 'Foreign Smoke in Broken Parcels,' for an opium-smoking den. But within they are full of uncleanness and abominations, and there nightly the games of *fan tan* and 'blowing the fist' go on lively, sometimes until long after midnight, or until the wretched debauchees have spent the last dollar of their week's wages."

Contrary, we think, to the general impression as to the efficiency of the Chinese laborer, Mr. Powers shows by observation and calculation that they are much inferior to Americans. "Watch them shovelling earth on the embankment. They swoop and spoon up a little earth, and listlessly toss it a short distance, allowing the blade of the shovel to drop to the ground every time. A man who lets his shovel-blade drop after every throw is not worth his salt," adds the writer, who does not mean, however, to be taken literally. The Chinaman, he had just proved, was worth something, but less than the American. For example :

"I have tried many times, but always without success, to ascertain the average daily ration consumed by the Chinese railroad laborer, as a means of comparing their value with that of Americans. The reason this cannot be obtained is because they eat so many oily gallimaufries, alliaceous stews and indescribable vegetable hotch-potches, of which the ingredients are principally brought from China and have Chinese names. But the price paid them serves the purpose pretty well, for in a free and open market a thing will eventually fetch what it is worth and no more. A Chinese railroad laborer receives \$1 a day and boards himself, an American, \$1.15 a day and is boarded. Messrs. Sisson & Wallace, who have large contracts for supplying Chinamen, inform me that the average cost of their board is \$3 per week. In California 75 cents a day, or \$5.25 a week, is considered about the value of a working man's board. By taking the above wages and adding the board to one and subtracting it from the other, we have a Chinaman's work worth \$4 a week, and the American's \$13.25; in other words, the value of the American railroad laborer is to that of the Chinese as 3.31 to 1. This result seems rather startling, and perhaps something ought to be allowed on the Chinese side for the element of prejudice, though a 'soulless corporation' will not allow itself to be swerved from its interest very much by any such consideration. And it is the almost universal testimony of contractors, overseers, section-masters, etc., that they would rather have an American at an American price than a Chinese at a Chinese price."

SOUTH AMERICA.—Captain Selfridge, whose explorations of the Isthmus of Darien in 1871 discovered a practicable route for a ship canal, has in the surveys of the present year improved upon his former line, and now declares practicable a canal twenty-eight miles long, divided as follows: (a) Beginning at the Atrato River, 150 miles from its mouth, twenty-two miles through an almost level plane, requiring

but nine locks to reach the summit level; (b) three miles of rock cutting without locks; (c) three miles of tunnel through solid rock—dimensions 120 feet in height by 70 feet in width—and a rapid descent of less than a mile to the Pacific by means of thirteen locks. The total cost is set at \$70,000,000. The line followed after leaving the Atrato is up the valley of its tributary, the Napipi, as far as its junction with the Doguado, and then up the valley of the latter. The highest point of the Cordilleras along the line of the canal is but 658 feet above the Pacific. It will aid our ideas of the geography of this region if we remember that the Atrato is a great river running north and emptying into the Gulf of Darien. Its course when it receives the Napipi is very near the Pacific Ocean. At 180 miles from its mouth it is 2,000 feet wide, and deep enough to float the heaviest ships. Its eastern tributaries are gold-bearing. The western (with which only we need concern ourselves) are the Napipi, to which the Doguado is a tributary from the south; and, further south, the Boyaja, into which the Cuia empties. Above the junction of the Boyaja with the Atrato, on the right bank of the latter river, is the somewhat important town of Quibdó, capital of the province. The Doguado rises among the hills within a mile of the Pacific beach. On this coast we must remember Cupica Bay, of which Limon harbor (into which Limon River empties) is an indentation. South of this, Chirichiri Bay.

OCEANICA.—The census of New Zealand taken for the night of Feb. 27, 1871, and just published, makes the total population of this colony to be 256,393, the native population being estimated at 37,502. In three years there had been an increase of 17.25 per cent. More persons were engaged in mining (20,226) than in agriculture (18,863) or in commerce and manufactures (11,079).

—The Russian explorer of New Guinea, Michlucho-Maclay, was brought by the clipper-ship *Isumrud*, which had been sent to his relief from Hongkong, safe and sound into a port of Java, Feb. 23. To the same island a Dutch expedition under Correngeel and Crawford was dispatched last year; an Italian expedition under Beccari and D'Al-

bertis. In the years 1861 and 1870 the west coast was explored by a solitary Italian traveler, G. Emilio Corruiti, from McClure Bay to the Island of Adi, but he has as yet published nothing on the subject.

—It is somewhat odd that England and Holland having exchanged territory in Sumatra and Africa, the former should find hers invaded by a powerful body of Ashantees, threatening Cape Coast Castle, and the latter hers by the Atchinese, whom she had attempted to subjugate—both events occurring in the month of March. In their assault on the stronghold of Atchin (Craton) the Dutch troops were signally repulsed, with the loss of their commander. The native enemy was well provided with artillery and made a skilful use of earthworks. They inhabit the north-eastern portion of the island, number two or three millions, have a sultan, are by religion allied with the Mahomedans, and in race are said to be peculiarly manly and independent. The Dutch have abandoned the campaign by land and are threatening a blockade. Meantime a native army of 10,000 strong is marching on Delhi, one of their seaports. In their self-sought difficulty the Dutch can hardly be said to have the sympathies of mankind.

NORTH POLE.—Since the letter addressed, Aug. 25, 1871, to the Navy Department from Tessiusak, Greenland, nothing authentic had been heard from Capt. Charles Francis Hall and the *Polaris* till May 9 of the present year, when tidings reached St. Johns, Newfoundland, that the English steamer *Tigress* had, on April 30, picked up off the ice at Grady Harbor, Labrador, 19 of the *Polaris* company. These consisted of H. C. Tyson, assistant navigator, Fred. Meyer, meteorologist, the cook, steward, and six seamen; the rest Esquimaux, of whom five were children, and one wanted little of having been born on the ice during the perilous voyage of over six months. Their story in brief was, that Capt. Hall died Nov. 8, 1871, two weeks after returning from a sledge excursion north. He had previously taken the *Polaris* to lat. $82^{\circ} 16' N.$, and returned to winter in lat. $81^{\circ} 38'$, long. $61^{\circ} 44'$. His death is variously ascribed to apoplexy, paralysis, and (by the Esquimaux) to poisoning. The

Polaris left winter-quarters Aug. 12, 1872, but was shortly caught in an ice-jam and badly stove. While thrown up in this condition, it is said an attempt was made to land the ship's stores, etc., in case it became necessary to abandon her; and in the midst of this operation the ice parted, carrying away the *Polaris*, and leaving Tyson and his companions with a certain quantity of provisions and two boats on the ice. They charge Capt. Buddington and the others with a deliberate refusal to take them on board although there was yet time, and with neglecting to sail to their rescue, though the *Polaris* was seen again on two separate occasions, apparently all right. From Oct. 15, 1872, however, they saw no more of her, and from that time till rescued, with incredible privations but happily without loss of life, they floated southward on their ice-raft, exchanging it when it broke up for another, and running against the *Tigress* in a fog. It would be unjust to those still remaining in the *Polaris* (including the entire scientific corps) to lend this story entire credence. What the expedition has accomplished or may yet accomplish is of course undetermined. Capt. Sherard Osborn lately argued before the Royal Geographical Society in favor of a probable extension of Greenland north-westward to and perhaps past the Pole, and hence in favor of land expeditions hereafter instead of marine. Great weight should doubtless be given to this view; but we beg leave to suggest that the money now expended in fitting out either sort, be devoted to perfecting air navigation, when a flight to the Pole (say from Tessiusak as a base) will be almost as easy in reality as it is in fancy.

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—The Royal Geographical Society has decreed the Founders' Gold Medal to Mr. Ney Elias, for his survey of the new course of the Yellow River of China, and for his recent journey from China through Mongolia, *vid* Uliassutai and Kovdo.

Obituary.—John Arrowsmith, the last of a well-known family of geographers, died in South Kensington (London) May 2, aged 83. He was one of the founders of the Geographical Society, and himself received the Patrons' Gold Medal in 1862.

Photography.—We saw lately in the case of Baltimore (MONTHLY for April) what could be done by way of acquainting ourselves with the physiognomy of a strange city. This month we invite ourselves to visit Cincinnati, of course *via* 591 Broadway, with the Messrs. Anthony for our guides. In July, Cincinnati is by no means a cool place, and we shall be excused for making straight for the Tyler-Davidson Fountain, the gift of Mr. Henry Probasco to the city. The mass, proportions, and main details of this meritorious design can be very well studied from the fine views now to be enumerated: *General view—front.* The vista is westward, down Fifth street. The presiding water-genius, showering liquid blessings on all who will receive them, here faces us in the attitude of benediction. Below, around the basins, we see the husbandman, the woman and her infant going to the bath, and the fireman; while all four of the kneeling figures over the drinking fountains directly upon the Square are discernible. *General view—rear.* This is exactly the reverse of the foregoing, and introduces two new colossal figures at the base of the central shaft, viz., the thirsting invalid, and the woman who ministers a grateful draught to him. No. 7538, *General view—south*, is on a larger scale, and makes the husbandman the central figure of the groups already described. No. 7543, *Group on the north side*, on a still larger scale, shows the fireman in the centre, standing with empty bucket on the blazing roof. The bathers and the nurse and invalid are also plainly revealed. The scale is again enlarged in the view of the drinking-fountain on the north-east corner—a boy, with an unhappy duck between his knees. Next after the fountain, Cincinnati is proud of her bridges. That which leads across the Ohio to Covington, Ky., is a suspension bridge, shown in general view No. 7552 (?), looking northward, as we infer. Of the Newport and Cincinnati bridge there are three excellent views—*west side*, No. 7561, *east side*, No. 7562, both looking toward Newport; and *interior*, No. 7563 (?) In the last, one looks up from below the unfinished iron trestle-work, which casts beautiful shadows on a bridge running transversely below; in the distance are the picturesque heights of Cincinnati. Passing again into the city, we may select among public buildings the view of the Court-house, on Main street; the Post-office, on Fourth street, corner of Vine; and, more characteristic in its architecture than either of these copies of classic models, Wood's Theatre, corner of Sixth and Vine.

(b) Almost due north from Cincinnati, in Michigan, lies Jackson County, where, in our flight yet further northward, we may pause to look at the *Iron Mine*, No. 274 (3), (Zimmerman series?) The ore here is of a different kind from that found, for example, in West Stockbridge, Mass., where one sees a mere excavation of yellow earth carried on in a great open pit. In Jackson the ore apparently must be blasted, and our view is taken at the entrance to the shaft or tunnel, down which a railroad track disappears. Crossing the second peninsula of Michigan, we arrive at Lake Superior, of whose bold north shore we have an impressive souvenir in *Thunder Cape*, 1350 feet high (Zimmerman). *Duluth*, however, is our destination, the new city at the westernmost extremity of the lake, at the mouth of the St. Louis River. We see it (No. 626,) from a pine and birch clearing above the town, which stretches away in a pleasing course on the spit of land between the lake and the St. Louis estuary. The canal through this spit, the breakwater, and the inner harbor works are all posterior to the taking of this view, which is still well worth possessing. In the distance are the hills of Wisconsin, and, abandoning Minnesota for a moment, let us transport ourselves to Adams County, in the former State, and the *Dalles of the Wisconsin River* (No. 772). "Dalles" we may translate by "cañons," a natural feature which we are accustomed to seek much further west and south. They are six miles long, but the walls are not above 100 feet high. In the view just named we have a huge isolated column of rock with a flat capital (a sort of stony mushroom), the work of water. Similar rock, consisting of horizontal strata and water-worn, is found in the *Wonder Rocks of Adams County* (No. 790) and *A Day at Light House* (No. 148). These masses bear a striking likeness to the Sentinel Rocks of the Kibab Plateau described in the June Notes. For the charming and tranquil course of the Wisconsin River below the waterfalls and the Dalles, we must have recourse to Parkman's word-painting in his "Discovery of the Great West," pp. 54, 55, when telling how Joliet and Marquette passed down it on their way to the Mississippi (A. D. 1673). That stream reached, one degree of north latitude brings us to the town of Winona, in Minnesota, on the right bank of the Mississippi. Near by is *Sugar Loaf Mt.*, which in the Yosemite would be called Half Dome, the river which we see flowing south in the distance having apparently washed away one-half the original crown of this now doubly picturesque height. Anything prettier than the belt of trees lining the torn flank of the hill, one seldom sees in painting or in photography. Keeping up the "Father of Waters" we reach at Minneapolis the *Falls of St. Anthony*, shown to great advantage in this view of Zimmerman's, with the town in the distance and the suspension bridge which connects it with St. Anthony. We close our north-western tour with a visit to the famous *Pipestone Quarry* on the western border of Minnesota, from which the Indians, from time immemorial, have procured the material for their pipes. (Concerning this

sacred place of the aborigines, passage to and from which was always religiously safe even to hostile tribes, the curious reader may consult pp. 153-158 of Catlin's "Life amongst the Indians," and the issue of the *American Naturalist* for February, 1869.)

(c) Collectors of all tastes, but particularly schools, should prize every stereoscopic view of the fleeting race of our native Indians. We can recommend No. 496, Z., *Chippewa Deer Hunt, on Snow Shoes*, with hunter and squaw and a fine forest background; No. 642, *Chippewas making Birch Canoes*, two men in civilized costume, before their camp in the woods; *Chippewa Domestic Life*, No. 738, a squaw with papoose, sitting on an overturned canoe just outside the wigwam, a little girl at her feet—the squaw's face is admirable as a type; No. 174, *Little Six*, a Chief concerned in the Minnesota massacre of 1862; No. 179, a Winnebago warrior, *Standing Buffalo*, who is lying down, however, in the picture, and showing off his naked muscular torso; No. 852, a pretty *Dakota Child Musician*, playing a sort of flageolet; No. 74, a group of *Omaha Chiefs*, with some remarkable pure-Indian faces; and a solitary *Omaha*, sitting closely wrapped on a log outside his wigwam, with gun and deer's antlers beside him; and finally, No. 180, an *Iowa* chief, grim, barbaric, naked to the waist, and adorned with broad armlets, medals, and feathers.

A STRIKING AND BEAUTIFUL CUSTOM.

IN the whole of Spanish America, but especially in the larger towns, the moment of the Angelus has a strange attraction for the stranger. As the usage requires every one to halt, no matter where he may be, at the first stroke of the bell, to interrupt his conversation, however important, and listen without stirring until the conclusion of the chime, the singularity of a whole population surprised in a moment as it comes and goes, held in a state of petrification, and paralyzed as if by an enchanter, may be imagined. On every side you see gestures interrupted, mouths half opened for the arrested remark, smiles oddly lingering or passing into an expression of prayer. You would fancy a nation of statues. A town in South America, at the tinkle of the Angelus, resembles the city in the "Arabian Nights," whose inhabitants were turned into stones. The magician here is the bell-ringer. But hardly has the vibration ceased

when a universal murmur arises from these thousands of oppressed lungs. Hand meets hand, question seeks answer, conversations resume their course; horses feel the loosened bridle and paw the ground; dogs bark, babies cry, the fathers swear and the mothers chatter. The accidental turns thus given to conversation are many, and sometimes striking.

WOOD CRYSTALS:

CHEMICAL analysis has long since detected the presence of various mineral substances—potash, soda, silica, etc.—in many forms of vegetable growth; and the main source of potash at present, as of soda in former times, is the ashes of certain trees and plants. It also appears, as the result of microscopic investigation, that many of these mineral salts retain or assume a crystalline form even when embedded in the solid portion or bark of certain plants. The accompanying figure represents a thin layer of the bark of the poplar as it appeared under the microscope, with the crystals *in situ*.



Wood Crystals.

Should it be proved that the form these crystals assume is regulated or modified by the conditions and character of the growth which encloses them, it is evident that the fact would be one of great interest to science, and of peculiar value and service to the druggist, since it would enable him to determine the nature and purity of any medicinal bark or wood, by examining a crushed sample under the glass, and comparing the forms of the crystals with those presented in a series of standard plates. Thus the absence of the desired crystal, or the presence of others differing in form from the standard, would enable him to determine the nature and extent of the impurity or adulteration.—*Industrial Monthly*.

THE STUDY OF WORDS.

SOME one has called language "fossil poetry," and strangely as the idea may strike us, there is much truth in it. Perhaps "poetry" is too limited, for one word may be a short history of the manners or development of a nation, or it may define a newly discovered truth and fossilize it, thus preserving it to the world. Whatever theory we may adopt as to the origin of language, it is easy to trace its growth now, and most interesting to study its history. We are told in Genesis that the animals were brought to Adam and he named them. Whether the naming was the result of inspiration, or was guided by some peculiarity in the object named, or was entirely arbitrary, it is not our purpose to discuss. It is, however, worthy of note that in all languages the verbs we employ in speaking of animals are often suggestive of their peculiar characteristics; thus we say the bees hum, the ox lows, the lion roars. Prolong these sounds, and there will be a close resemblance between them and the cries of the brute creation. And when any peculiarity is thus seized and fossilized into a word, it is an acquisition to language which will not be forgotten. Thus Whittier has given the word *lapse* a signification which it did not before possess when he speaks of "lapsing waves." In the very word is suggested the gentle rise, dispersion, and fall of the swell. How impossible to imagine the angry break of waves on a rocky coast, expressed by this word "*lapse*." There is a sense of fitness when the words we use express by their very sound the idea we wish to suggest. We may instance *lull*, *splash*, *buzz*, *screech*, *wring*, and *wrong*, something forcibly turned from the right.

The origin of such words is evident enough; there are others which do not carry their pedigree so plainly stamped upon them. They are oftenest derived from foreign languages, and to them we must go for information. *Lady* is derived from the Anglo-Saxon *hālf* a loaf, and *weardian* to look after, which made *hālfweardige*, or as it was afterward contracted *lefdi*, bread-keeper. Another etymology

derives it from *hálf* and *dian*, to serve, because the women served the food. An insight is thus obtained into a custom common at that day when woman distributed bread not only to her own household but also to poorer neighbors; and thus the name lady, originally one who discharged her household and neighborly duties, is rightly the title of honor which we esteem it.

In these days of great political excitement, we hear almost constantly of "candidates," but do we know the origin of the word? It is derived from the fact that in ancient Rome aspirants to public offices were dressed in white, *candidati*, whence our word. And "ambition" is derived from *ambitio*, a going around, especially to solicit votes; hence a desire for office, and finally applied to desire for aggrandizement of any sort. Thus tracing words to their origin gives an insight into customs of whose existence we would otherwise be ignorant, or it may give us scraps of interesting information. "Currant" takes its name from Corinth, from which place it was brought to England; "cherry" comes from *Cerasus*, a city in Pontus. If we have ever thought of the derivation of "gooseberry," we have probably connected it in some way with a goose, but it is a corruption of *gossberry*, because it has prickles like the Anglo-Saxon *goss* or *gost*, a low shrub.

The close examination of a word often yields information of much historic interest, and even were we before cognizant of the facts presented, the knowledge that they are embodied in the word suggests them to us whenever we hear it. Let us examine the word *Britania*, and see if we can discover anything of value in it. It occurs first in Greek, and later in Latin writers, but we look in vain for the root in those languages. The English being members of the Teutonic family, we search those languages, but without result. The Celtic dialects do not furnish a clew, nor do those of any of the peoples whom we know to have visited the island tell us the derivation of the name; but in that family of which the Lapp and Basque are the only representatives in Europe, we find a root which answers our purpose. The name *Br-itan-ia* contains the suffix, *itan*, signifying county, district, found in so many of the countries

occupied by the Iberic race; as *Aqu-itan-ia*, *Lus-itan-ia*. From this we may safely conclude that in pre-historic times the island was visited by members of the Iberic race. The study of words is no idle pursuit fit only to awaken curiosity; as in the present instance it often yields invaluable information. Indeed were the early history of England unknown to us, we would still be able to read much of it by studying the derivation of words. The prevalence of Norwegian local names in the far north and in the southwest of Scotland, of Danish in the south of Scotland and north of England, and of Saxon in the southern half of England, tell us the story of the descent upon those shores of the nations named; while the fact that the Celts were driven into the interior is attested by the Celtic names in the centre of England and in Wales. The final ascendancy of the Normans over the Saxons can still be traced in the language, for the names of commoner objects, such as house, home, hearth, are of Anglo-Saxon origin, while palace, and words denoting luxury, are all of Norman stock. One author has pointed out the significant fact, that names of live animals, as ox and sheep, are Saxon, but beef and mutton are Norman, which indicates, what was really the fact, that the Saxons tended the herds, and prepared the meat for the table, but their Norman lords eat it. To this rule there is one exception, swine, from which we conclude that pork was the only meat which the Saxons could obtain.

Something of the character of the Franks may be learned by an examination of their national appellation. They were a German tribe or collection of tribes occupying Gaul, who gave themselves the proud name of Frank, "the free." Their nobility of character and love of freedom distinguished them from the degenerate Romans and Gauls by whom they were surrounded, so it came to pass that wishing to denote open-heartedness and honesty, their neighbors employed the name of the nation possessing these qualities in an eminent degree. So when we speak of a frank person, we are paying a tribute to a people of whose history we may be totally ignorant. "Slave" is derived from a tribe, the Slavi or Scclavi, who were frequently held in bondage by the Germans, and hence it is now applied to any who are

deprived of freedom. How true is it and how expressive of the actual facts of the case that we have applied this word to an intemperate person, as we say, "a slave to drink" or "a slave to passion."

The word "idiot" gives us a glimpse of Greek ideas. It originally meant a private individual, and in this sense it is used occasionally in old writers, as when Jeremy Taylor says: "Humility is a duty in great ones as well as in idiots." Inasmuch as the Greeks considered participation in public affairs the highest employment, and all were anxious to engage in it, the class of private individuals were naturally looked upon as not as intelligent as those in public life, so there was a little reproach added to the word. Its present signification is only the same idea pushed to an extreme. Thus words change in meaning so completely, that they become in effect new words. Diffidence and despair were formerly synonymous. An old writer speaks of the sinner's "diffidence" in the hour of death. Gradually the word has modified its meaning, until now it signifies simply distrust in oneself. Appreciate is assuming a new signification in our day, as when we say stock appreciates in value instead of rises in value. Rise expresses all that appreciate does, so in the end one will probably vanquish the other, which must then assume a new meaning.

The derivation of some words, as darwinism, mansard, macademize, all derived from proper names, are too evident to need comment, although some curious facts may be learned from their study. A word peculiarly American has fixed unjust reproach upon Governor Gerry, of Massachusetts. During his term of office the State was re-districted in such a manner as to give an unfair number of representatives to the party in power, and, as it was supposed that he sanctioned the proceeding, the practice was named for him, and although it is now known that he opposed the measure, "gerrymander" will remain a reproach to him as long as the political trick which it characterizes exists.

The absence of words from a language also has its lesson for us. Moffat, a missionary in South Africa, tells us of a

Caffre tribe which formerly had a word, "Morimo," signifying "Him that is above" in the sense of a Scripture Being, but as they sank in degradation, they lost the idea of a God, and now only a few old men recollect to have heard of "Morimo" in their youth. In this one fact we have the history of their degeneration. Another savage tribe in Brazil have no word for thanks, "That is what I want," is the nearest approach to it, and travelers assert that in fact they have no conception of gratitude. In the native language of Van Dieman's Land there are four words to express the taking of human life, but there is not the slightest reprobation in any of them.

Such facts are curious and interesting, but not alone from curiosity should we pursue this study. "A language will often be wiser not merely than the vulgar, but even than the wisest of those who speak it. Being like amber in its efficacy to circulate the electric spirit of truth, it is also like amber in embalming and preserving the relics of ancient wisdom, although one is not seldom puzzled to decipher its contents. Sometimes it locks up truths which were once well known, but which in the course of ages have passed out of sight and been forgotten. In other cases it holds the germs of truth, of which, though they were never plainly discerned, the genius of its framers caught a glimpse in a happy moment of divination. A meditative man cannot refrain from wonder when he digs down to the deep thought lying at the root of many a metaphorical term employed for the designation of spiritual things, even of those with regard to which professing philosophers have blundered grossly, and often it would seem as though rays of truth, which were still below the intellectual horizon, had dawned upon the imagination as it was looking up to heaven. Hence they who feel an inward call to teach and enlighten their countrymen, should deem it an important part of their duty to draw out the stores of thought which are already latent in their native language, to purify it from the corruptions which Time brings upon all things, and from which language has no exemption, and to endeavor to give distinctness and precision to whatever in it is confused, or obscure, or dimly seen."

EDUCATIONAL INTELLIGENCE.**NATIONAL EDUCATIONAL ASSOCIATION.**

THE thirteenth annual meeting of the National Educational Association will be held at Elmira, N. Y., on August 5th, 6th and 7th. The railroads centering in Elmira have promised free return tickets to those attending the meeting. After very brief opening exercises, at 10 A.M. on Tuesday, the Association will proceed to business, the morning and evening of each day being occupied by the General Association, and the afternoon by the four departments. The importance of brevity is earnestly urged upon all who take part in the exercises. The programme is as follows:

GENERAL ASSOCIATION.

1. "Upper Schools," by Dr. James McCosh.
2. "How much culture shall be imparted in our free schools?" by Richard Edwards.
3. "Ought the Chinese and Japanese Indemnities to be refunded unconditionally, or devoted to specific educational purposes?" In the discussion of the question, Mr. Chin Laisun, of Shanghai, will speak of the New Educational Movements of China, and Prof. E. H. House, of the Imperial College of Tokei (Yedo), on "The New Educational plans of Japan."
4. "The Normal Question," by E. E. White.
5. "Should American Youth be Educated Abroad?" by Dr. Jackson, President of Trinity College, Connecticut.
6. "Education in the Southern States," by Hon. J. C. Gibbs, State Superintendent of Schools, Florida. Discussion opened by E. H. Fairchild, President of Berea College, Kentucky.
7. "Co-Education of the Sexes," by President White, of Cornell University.
8. "The Relation of the General Government to Education," by Prof. G. W. Atherton, Rutgers College, New Brunswick, New Jersey. Discussion opened by John Hancock, Superintendent of Schools, Cincinnati.
9. "Educational Features of the Vienna Exposition."

NORMAL DEPARTMENT, A. G. BOYDEN, PRESIDENT.

1. "The Duties and Dangers of Normal Schools." Richard Edwards.
2. "Elementary and Scientific Knowledge." John W. Dickinson.

3. "Training Schools,—their place in normal school work." Miss Delia A. Lathrop, Principal Training School, Cincinnati.

4. A paper on "The relative contribution of scholarship and methods to the power of the teacher," by Henry B. Buckham, Principal State Normal School, Buffalo, N. Y.

The following questions are also presented for discussion :

"To what extent and in what ways ought a normal school to conform its plans to the wants of the region in which it is located?"

"What should the normal school aim to accomplish in the teaching of natural science?"

DEPARTMENT OF HIGHER INSTRUCTION, J. D. RUNKLE, PRESIDENT.

1. "National University," by Charles W. Eliot, President of Harvard University.

2. "Study of the Classics," by Prof. Joynes, of the University of Virginia.

3. "A Liberal Education for the Nineteenth Century," by Prof. W. P. Atkinson, of the Institute of Technology, Boston.

DEPARTMENT OF SUPERINTENDENCE, W. T. HARRIS, PRESIDENT.

Details soon to be announced.

ELEMENTARY DEPARTMENT, N. A. CALKINS, PRESIDENT.

Two papers on Elementary Instruction.

1. "Thought and Sentence Method," by G. L. Farnham, Supt. Public Schools, Binghamton, N. Y.

2. "Phonetic Method, with Pronouncing Orthography in its Relations to other Methods," by Dr. Edwin Leigh.

Discussion of the subject to follow the last paper.

"Arithmetic—Principles and Methods of Illustration," by M. McVicar, Principal of the State Normal Training School at Potsdam, N. Y.
Discussion to follow.

"How may the Elementary School Instruction be made most useful to the future citizen?" by H. F. Harrington, Supt. Public Schools, New Bedford, Mass.

Discussion to follow.

"What number of School hours, daily, is most profitable for children under ten years of age?" by And. J. Rickoff, Supt. Public Schools, Cleveland, Ohio.

Discussion to follow. •

"How may pupils in Elementary Schools be trained to speak and write our language correctly?"

Discussion to follow.

The hotels reduce their rates to members of the Association about one dollar a day, as follows: Rathbun House, \$3.00 per day; Frazer, Delevan, and Hathaway, \$2.50; Lyon House, \$2.00.

NEW YORK STATE TEACHERS' ASSOCIATION.

This Association will hold its twenty-eighth anniversary at the Opera House, Utica, commencing at 2.30 P.M., Tuesday, the 22d of July, and continuing Wednesday and Thursday.

There will be two general sessions each day. The afternoon of each day will be devoted to meetings in sections, representing the different departments of educational work, thus affording for each the opportunity of free and full discussion. They are expected to organize on Tuesday, at 4 P.M., by election of chairman, secretary, etc. In order that there may be no delay or embarrassment, a committee for each section has been appointed to secure the preparation of papers on subjects pertinent for consideration and discussion. The following persons have been appointed as chairmen of the respective committees: 1. On Common and Graded Schools, Charles T. Pooler, Esq., of Deansville. 2. On Professional Training of Teachers—Normal Schools and Institutes, Prof. H. B. Buckham, of Buffalo. 3. On Colleges, High Schools and Academies, Dr. John W. Mears, of Hamilton College. 4. On Supervision, the committee will consist of the officers of the School Commissioners and Superintendents Association, of which Comr. O. F. Stiles, of Saratoga, is President.

The programme of exercises includes (besides the reports of standing committees), addresses, and papers for discussion, by Prof. Le Roy C. Cooley, of Albany, on "Claims of Natural Science to a place in Common School Instruction;" by Hon. L. Van Bokkelin, of Mt. Morris (formerly Superintendent of Schools, Maryland), on "Education of Women;" by Dr. Dio Lewis, of Boston—subject, "Our Eyes and Ears;" by Principal Hannibal Smith, of Watertown,—"The Academy as an organic part of a system of Public Education;" by Dr. Mears, of Hamilton College,— "Mutual Relation of Colleges and High Schools;" by Mrs. Nellie Lloyd Knox, of Brockport,— "Primary Instruction;" by Comr. R. L. Selden, of LeRoy, on "Supervision in Rural Districts." Addresses will also be delivered by Hon. Horatio Seymour, of Utica, Hon. Andrew D. White, President of Cornell

University, and by George Kennan, Esq., of the Russo-American Telegraph Exploring Party, on "Our Life in Liberia." Gen. John Eaton, Commissioner of Education, Washington, Hon. Abram B. Weaver, State Superintendent, Gen. John A. Dix, Governor, and other distinguished men of our own and other States, have also given encouragement that they will be present and participate in the exercises.

On Friday, a field meeting will be held at Trenton Falls, a short distance north of Utica. Dr. James Hall, State Geologist, Prof. Charles Peck, State Botanist, and Prof. J. A. Lintner, State Entomologist, will accompany the excursion, and at lunch-time, explain the natural features of that locality.

City Superintendent McMillan, and others of the local committee, are making complete preparations for the care and convenience of the Association. Board will be provided at reduced rates, from one to three dollars per day. Headquarters will be at Baggs Hotel, near the terminus of all trains leading into the city. Reduced rates have been generously offered by nearly all the leading railroads from the northern and southern portions of the State.

THE tenth anniversary of the UNIVERSITY CONVOCATION OF THE STATE OF NEW YORK, will be held at Albany on the 29th, 30th, and 31st of July.

COLLEGE INTELLIGENCE.

CONNECTICUT.—NEW HAVEN.—North Sheffield Hall, the last gift to Yale College of Hon. Joseph E. Sheffield, was formally opened June 4th. The audience present was a very large one, and, considering the character of the occasion, was very noticeable for the number of distinguished persons present, comprising many members of the State Legislature and several Governors. Prof. Brush, on behalf of Mr. Sheffield, presented the building to President Porter, the representative of Yale College, and

asked that it should be called North Sheffield Hall. President Porter briefly acknowledged the gift. The school has received from Mr. John J. Crook, of New York City, \$1,000, and from the class of 1871, \$570. Twenty-six thousand dollars have also been subscribed toward a fund for a professorship. The heirs of N. A. Bacon, Esq., have also presented a valuable collection of scientific works.

The new building occupies a lot on Prospect-street, about 200 feet north of the old building. Its plan is rectangular, and it has substantially five stories. The interior finish throughout is yellow pine, coated with oil and shellac, and trimmed with pine, ash, and black walnut. The total cost of the building and fittings is \$110,000.

HARTFORD.—The alumni of the Hartford Theological Seminary have elected Rev. Dr. Gale, of Lee, Mass., President of their association.

GEORGIA.—ATHENS.—The University of Georgia has 312 students, only twenty of whom are from without the State limits. Of the whole number, 151 are in the State college, 145 in the academic department, and sixteen in the law school.

MARYLAND.—ANNAPOLIS.—The graduating exercises of the Naval Academy, Annapolis, have been concluded. Zun Zou Matzmulla, a Japanese youth, was of the graduating class.

MICHIGAN.—HOLLAND.—Hope College, founded in 1866, numbers ten professors in its Faculty. It was opened more especially for the Dutch residents of Michigan, and, judging from the names in the catalogue, its students are mostly of that nationality. It has three departments, a Theological, an Academic, and a Preparatory. The first numbers eight students, the second twenty-one, and the third forty-four. Although it is numerically a small institution, we notice that in the academic or college department the standard of study equals that of our best colleges. Dutch is one of the studies in the curriculum.

NEW HAMPSHIRE.—HANOVER.—The senior class at Dartmouth College numbers 71, out of 105 who have at times belonged to it. The average age is 23 years and 8

months, the extremes being 28 and 20; the average weight is 149 pounds, the extremes being 206 and 105; the chosen professions are: law, 21; theology, 12; medicine, 8; engineering, 4; teaching, 4, and journalism, 1.

The triennial catalogue will hereafter be printed in English instead of Latin, and the Greek oration of the junior exhibition will also be abandoned.

NEW JERSEY.—MADISON.—Dr. J. F. Hurst has been elected to the presidency of Drew Seminary, recently vacated by Bishop Foster. Dr. Hurst has been at the head of the Martin Mission Institute in Frankfort, Germany, and has occupied the chair of Church History in Drew Seminary. He has published a history of Rationalism, a translation of Hagenbach's History of Christianity, and of the commentary of Lange on the Epistle to the Romans.

NEW BRUNSWICK.—To Rutgers College, the past twelve years have been years of unprecedented prosperity. The number of students has increased from 80 to 200. The buildings, from four to eight. The endowment from \$70,000 to \$500,000. And still greater improvements have been made in discipline and in teaching.

NEW YORK.—ALBANY.—Hon. Martin J. Townsend has been elected Regent of the New York State University by the Legislature of this State.

AUBURN.—The trustees of Auburn Theological Seminary have voted to accept Col. Morgan's offer to remove it to Aurora, New York, and amply endow it unless the citizens of Auburn raise two hundred and twenty-five thousand dollars in sixty days.

GENEVA.—Commencement occurs June 19th, at which fifteen students graduate. Only thirty remain in the three lower classes. The college has a fine corps of special lecturers. Its library contains about 13,000 volumes, the collection of Mineralogical and Geological specimens is large and valuable, and collections in other departments of Natural History have been begun.

ITHACA.—At Cornell University the corner-stone of the Sage College for women has been laid. The main building is to cost \$150,000; the chapel \$30,000. One hundred thousand dollars have been given as a partial endowment.

NEW YORK CITY.—The herbarium of Professor Meissner, of the University of Basle, Switzerland, containing 63,000 botanical specimens, has been purchased by a gentleman for presentation to Columbia College.

POUGHKEEPSIE.—Vassar College numbers forty-two professors in its Faculty, and 411 students were in attendance this year. To the middle of the Sophomore year the studies are all obligatory, with the exception of the choice allowed between the Greek, German, and French languages. In each semester after that every student elects three, subject to the approval of the Faculty. No student is, under ordinary circumstances, either required or allowed to take more than an equivalent for three full studies at a time, together with one art study. By "full studies" are meant those in which there are five recitations a week.

ROCHESTER.—The total number of students at the university is 157; of whom 25 graduate this year. The Faculty numbers 12. The Geological and Mineralogical cabinets contain over 40,000 specimens carefully selected by Prof. Ward during six years of extensive foreign travel, and during many careful visits to the most fruitful American localities.

The Rochester Theological Seminary seems to be prospering. The endowment fund last year was \$113,750.43. It is now \$250,000, and it is expected to reach \$300,000 before the close of the year.

SCHENECTADY.—The gymnasium building of Union College is the latest addition made to the University. When completed it will be one of the largest buildings especially devoted to gymnastics in the country. It is to be eighty-five feet long, forty feet wide, and from thirty-five feet to forty feet high. It is to be built in the style corresponding to the well-known colonnades of the College. The students have collected a large portion of the funds necessary to put the building under roof. The foundation has already been laid in the rear of the South College.

NORTH CAROLINA.—Davidson College gives its name to the place at which it is situated. Its Faculty numbers eight professors, and 113 students are in attendance

Although the college was organized and is controlled by Presbyterians, the instruction is not sectarian, but such as can be freely and equally offered to all students of good moral character and of proper mental qualifications. The institution was chartered "to educate youth of all classes, without regard to the distinction of religious denominations, and thereby promote the more general diffusion of knowledge and virtue;" and its founders have frequently and publicly declared that their design was "to extend the blessings of a liberal education to all classes of the community prepared to enjoy them."

OHIO.—CINCINNATI.—It was announced some weeks ago that Dr. L. H. Bugbee would retire from the Presidency of the "Cincinnati Wesleyan College" at the close of the year. We now learn that he will remain President of the College. The trustees assume entire control, employ teachers, conduct finances, etc. The Faculty will remain about as the last year, with some additions. Nothing will be spared to make the college superior in all regards.

GAMBIER.—A pamphlet bearing the title of "Gambier" gives an account of Kenyon College and the Theological Seminary of the Diocese of Ohio. The late Bishop McIlvane was president of the Theological Faculty. Kenyon College has 50 students in the regular course and 20 in the Preparatory department.

PENNSYLVANIA.—EASTON.—Mr. George B. Markle, of Hazleton, Penn., has recently added the sum of \$30,000 to the permanent endowment of Lafayette College. This is one of the large series of gifts of which this college has lately been the fortunate recipient.

GETTYSBURG.—Seventy-nine students are members of Pennsylvania College and 50 are in the Preparatory department. Of these latter 28 labor under the title of Junior Preparatorians. There are 12 professors in the two departments.

TENNESSEE.—NASHVILLE.—The Vanderbilt University is to be located west of Nashville, on that parcel of ground situated between the Hillsborough Pike and the ex-

tension of Broad-street, and known as the Litton or Taylor Hill, adjoining Boyd's Hill. The plot embraces about seventy acres. A meeting was held in M'Kendree Church, May 9, in the interest of the University. Bishop Pierce presided, and appropriate and excellent addresses were delivered by Bishops Marvin and Doggett and Dr. Winfield. At the close, a subscription of \$11,300 was taken to aid in the purchase of the site for the university, of which amount \$4,000 was subscribed by Col. Reynolds, of Giles County, Tenn.

VIRGINIA.—ABINGDON.—The evil of overdressing in girls' schools is squarely met at the Martha Washington College. On all public occasions, and whenever they go off the grounds, the students are required to wear a plain uniform. The pupils are received as *ladies* and are treated with the respect due to their sex. The effort is constantly made to induce them to act from a sense of propriety and duty, and, while no degrading penalties are used, the *necessity* for government is fully recognized, and a strict conformity with the regulations is required of all. There are 51 students enrolled in the catalogue.

WASHINGTON AND LEE UNIVERSITY.—The peculiarity of this institution is that the course of study is arranged in distinct elective schools, to each of which a degree is attached. Students may elect their own studies; but in each school there is a prescribed course, which the student is required to pursue according to the degree of his preparation. 261 students were members of the university during the past year.

CURRENT PUBLICATIONS.

IT has long been the fashion with writers on English literature, to speak of Addison's Spectator and other essays as a "well of English undefiled," and to declare that "he who would acquire a perfect English style must give his days and nights to the reading of the Spectator;" but those who read Addison with care (and there are very

few now-a-days who read him at all), cannot but be aware that there are many passages in all his works which are so careless and inaccurate in their construction, that they would not be tolerated in any living writer of the first class to-day. This objection does not apply to the essays and miscellanies of Macaulay, of which we rejoice to see a new and beautiful edition just announced by a New York publishing house.¹ No writer of the present century, or of any past period of English literature, wields a pen with more elegance, force, and polish, than Macaulay; none possesses the power of drawing a living and speaking portrait of such perfection by a few dexterous strokes, as he. The acknowledged merit of his history, notwithstanding the severe criticisms made in regard to some of his statements, has placed it in the front rank of historical works; but to our mind the man was greater than his history, and possessed more power as an essayist and critic than as a historian. Of these six elegant volumes of essays, there is not one which can be spared without impoverishing English literature; not one which has not merits which make it a model of pure, terse, incisive English, prepared by one who knew, as perhaps no other man of this century has known, what were the powers and limitations of our English tongue. No library, and especially no public, college or school library, will be complete which does not include these classic essays. A style formed on such models will prove a fortune to its possessor.

"Cicero De Officiis," by Chase and Stuart, is the latest of the classical series published by ELDRIDGE & BRO. The text is in the main that of Baiter, though a few departures are made from it, all important changes being noted at the end, and the different readings given. The notes are full but are of a character rather designed to make the pupil help himself than to help him. A history and synopsis of the De Officiis are a welcome addition to the book. "Currier's Latin Suffixes" is published by the same house.

(1) *Essays, Critical, Historical and Miscellaneous*, by Thomas Babington Macaulay, Baron Macaulay. 6 vols., 8vo. N. Y., 1873. Mason, Baker & Pratt, 142 and 144 Grand St.

AMERICAN EDUCATIONAL MONTHLY.

AUGUST, 1873.

*SCHOOL HOUSES FOR THE COUNTRY.**

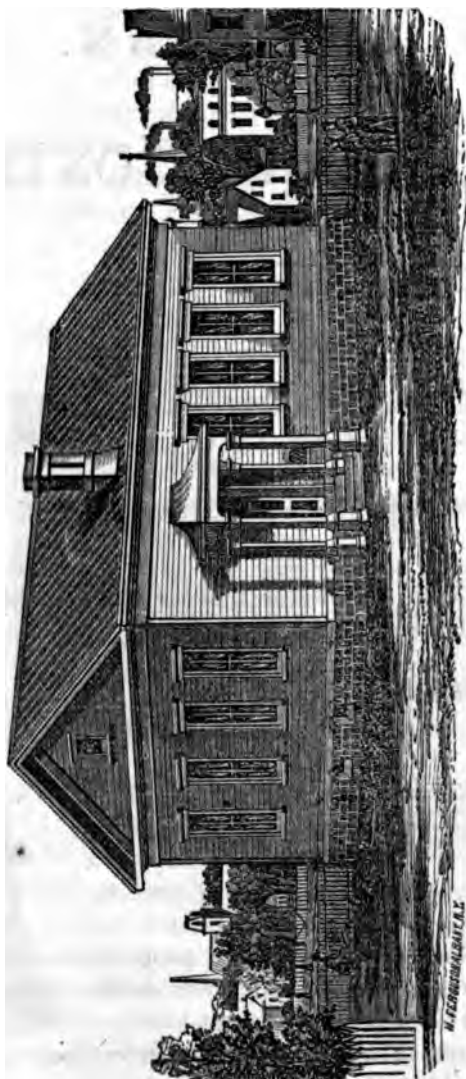
THE plan of this design represents a building approaching the size of the smaller Union Schools. As represented, the school-room has seats for seventy pupils, and by a slight addition to its length and breadth, may be made to accommodate from eighty to one hundred. The entrances are from the sides, and the two sides are finished exactly alike. This will give a large and commodious lobby for each sex, and a fine recitation-room for a second teacher. The entrance to the recitation-room may be from the porches, and the door in front of the school-room omitted, leaving the entire space directly in front for blackboard. The heating and ventilation of this room is like that already described. The rear doors may be omitted if thought best.



Fig. 64.

ELEVATION NO. 1.—This elevation represents a plain wood.

* From *Johannot's New Work on School Houses*.

**ELEVATION No. 1.**

building finished with ordinary siding. The windows are placed in the usual manner, the roof is made with as little pitch as is compatible with the use of shingles. No ornamental work has been admitted. The cornice is plain and substantial, and the building is as cheap as materials can be put together to answer the purpose of a good school-house. The small porch over the steps is a very desirable feature for the comfort of the pupils and for the cleanliness of the house. It affords protection from rains while the pupils are cleaning their feet, and at the same time it relieves in some measure the monotony of the architecture. A glance at

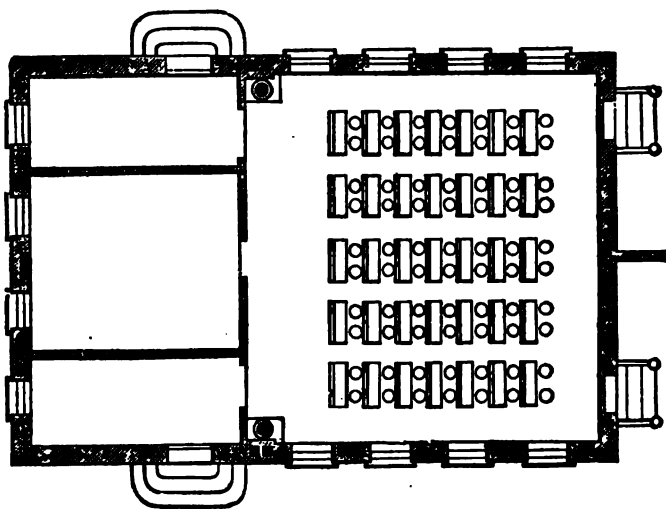


Fig. 65.

the engraving will show that, for just proportions, the roof of the porch is too low, and that when built, it should be elevated as far as the cornice permits.

In northern climates the foundations of buildings of this kind should be solid and continuous, both to give solidity to the structure and to prevent the circulation of cold air beneath the building. In the Southern States, however, it would be best to rest the building upon piers, to give a

free circulation of air beneath the entire building. This will make the school-room cooler in warm weather, and will tend to preserve the timbers from decay. The piers should be firmly and securely built, or the building will be racked.

ELEVATION 2.—This elevation represents a wood building with a batten finish. An inexpensive hood is placed above the windows, and a cupola surmounts the roof. This last feature may be omitted, as it is not an essential part of the



ELEVATION 2.

building. The roof of the porch is thrown up into a gable, producing a fine effect at little cost. The roof has a plain projecting cornice of the cheapest form. The same form of building may be finished with clap-boards, or it may be built of brick.

ELEVATION 3.—This elevation represents the plainest form of a brick building. The roof is about the usual pitch for shingles, and the only extra feature is the cupola, which may be omitted.



ELEVATION 3.

ELEVATION 4.—In this elevation the roof is made steeper than the last, the cornice lighter, and the extension of the cornice across the gable has been omitted. The doorway is covered with a porch, which rises in the main roof in the form of a gable. The material may be brick, stone, or wood. The bell-tower is made smaller and lighter than that of No. 3.



ELEVATION 4.

In erecting houses of considerable size and cost, due attention should be paid to durability. If the present generation leave as a legacy to their descendants excellent school buildings, the next generation may be supplied with the apparatus and physical appliances necessary to secure the highest success of the school. If, on the contrary, our children must be heavily taxed for school-houses, the era of school improvement in regard to methods, libraries, and cabinets, must be postponed for another generation.

Wood is the material most commonly used in the construction of school-houses, on account of its cheapness; and it answers a very good purpose for the building of small houses and for those that are designed to be temporary. Permanent houses, however, should be built of brick or stone; and this especially should be the case in the construction of the more elaborate buildings.

Our next article on School Houses will treat of UNION SCHOOLS.

ERRORS IN THE USE OF PREPOSITIONS.

I.—REDUNDANCE.

THERE is, perhaps, no nicer test of a writer's ability to use language correctly than the manner in which he employs prepositions. No part of speech is more a matter of idiom in its use than this. Hence, nothing is more common than to find writers not thoroughly conversant with English idioms tripping in their use of these particles. Even writers of acknowledged excellence are, not unfrequently, at fault here.

We purpose to present a few of the most common cases of improprieties in the use of prepositions. "These may seem trifling matters," as Mr. Marsh says;* "but in a syntax, depending like ours so much upon the right use of particles, strict accuracy in this particular becomes seriously important." Some of the examples to be adduced may be familiar; but others, it is believed, will be found to be new. At all events, while the errors referred to are so common and wide-spread, it may not be amiss to call attention to them and warn against their use. These errors are mainly of three kinds, namely, a superfluous use, an improper omission, and a wrong application. In the present paper a few examples of the first kind only will be instanced.

1. One of the most common is found in the form "of seven years old." A recent writer speaks of "a sweet babe *of only six months old*." Another says, "He was succeeded by his great grandson, a child *of five years old*." Even Mr. Hall, in his "Recent Exemplifications of False Philology," says, (p. 50,) "Neither in Old England nor in New is there a plough-boy *of ten years old* that could not here set Mr. White right." In all these and similar examples the preposition *of* is really superfluous; it is used without an object. "Six months," "five years," etc., in these instances correspond to the adverb *how* in the question "How old is he?" Ask the

* Lectures on the English Language, p. 669.

question "How old is the babe?" and the answer is "Six months old;" not "Of six months old." (It is true, the answer might be "Of six months' age;" but this is a grammatically different form from the one under consideration.) In a word, the expressions "six months," "five years," "ten years," are adverbial phrases without any governing word. The idiom is precisely the same as in the expressions "five miles long," "six feet high," "ten inches thick," etc. "A wall *of ten feet high*," or "A river *of a mile wide*," would be just as correct as "A babe *of six months old*," or "A boy *of ten years old*." Dean Alford, it is true, attempts to justify this impropriety. He pronounces "A gallows *of fifty cubits high*" legitimate. (*Queen's Eng.*, p. 188.) But his charity for common errors misleads his judgment here. He argues that the gallows "may be said to be 'of fifty cubits' (high or in height); the *of* being used as in the phrases 'She was of the age of twelve years,' 'of a great age,' to indicate the class or standard of the object spoken of." But the examples are not parallel, as may be seen by omitting the *of* in both instances: "A gallows () fifty cubits high;" "She was () the age of twelve years." In the latter, *of* is a grammatical necessity; in the former, when used, it is a verbal excrescence, a nuisance.

Gibbon wrote, (*Hist. of Rome*, Chap. xiv.,) "The vanquished emperor left behind him two children, a boy of about eight, and a girl of about seven years old." Had he stopped with the word *seven*, or even *years*, his sentence would have been correct. But the addition of the word *old* rendered the preposition *of* superfluous. The same would be true if the phrase *of age* had been used instead of *old*. The following sentence of Hawthorne's errs in the same way: "This child of three years old occupied all his heart." Either *of* or *old* should have been omitted here. We should prefer the omission of the latter. The phrases "of about seven years" and "of three years" are equivalent to the fuller forms "of the age of about seven years" and "of the age of three years," of which in fact they are mere abridgments.

2. Similar to the foregoing, in point of inaccuracy and inelegance, is the form "at nine years of age," or "at nine

years old." The expression *nine years of age* corresponds grammatically to such forms as "three feet in depth," "six inches in width," "two miles in length," and requires no preposition before it, any more than do these latter expressions. Still, there are writers that know no better than to prefix *at*. Mrs. Child, for example, in her "Good Wives," speaking of Mrs. Hutchinson, says: "At four years old she read perfectly well;" "At seven years of age she had eight tutors." The error here, however, is not so much a redundancy as the misemployment of a preposition for an adverb. *At* in both instances should be *when*, and the sentences read accordingly: "When four years old she read perfectly well;" "When she was seven years of age," etc., or "When she was seven years old," etc.; or else, "At the age of seven (or, At seven years' age) she had eight tutors." This last form is often elegantly abbreviated. Thus, "*At thirty* man suspects himself a fool," while perfectly correct, is far more pleasing than the unabridged form "at thirty years' age," or even than the form "at the age of thirty."

3. The use of *at* and *about* in juxtaposition—"at about"—is an inconsistency, not to say contradiction, that is very frequently met with. *About* conveys the idea of indefiniteness, anything but a want of preciseness in respect to either time or place. Its literal meaning is "in the neighborhood or vicinity of," "somewhere near." *At*, however, conveys the idea of definiteness and point. It fixes the place or time within comparatively narrow limits. "About the age of eleven" means not definitely eleven, but perhaps a year or so older, or a year or so younger—in that vicinity. "At the age of eleven," however, conveys another idea; it specifies the exact age. Hence the incongruity of the expression "at about." The following illustrates this error: "*At about* the age of eleven she passed a winter in London."—*Miss Browne's Memoirs of Mrs. Hemans*. Either drop one of these words altogether; or, if this does not convey the idea, say "At the age of eleven, or thereabouts, she passed," etc. The following are additional examples: "At about twenty miles from Berlin is situated the village of Sperenberg." "The company arrived at about nine o'clock, and left at near twelve."

It may not be amiss, in this connection, to advert to the loose way some have of using the word *about* when sufficient indefiniteness is expressed by other words. The following is an example of what we refer to: "The audience consisted of only about seventy-five or one hundred persons." The expression *seventy-five or one hundred* is sufficiently indefinite in meaning; and the coupling with this of a term designed to make the meaning more general is superfluous. It forms a species of tautology. Either say "consisted of only about a hundred persons," or "of less than a hundred;" or else drop *about*, and say "consisted of only seventy-five or one hundred persons." The meaning in all these cases is about the same, though it may be a matter of taste or choice which of the forms is used.

4. The adverbs *to-day*, *to-night*, *to-morrow*, and *yesterday*, should never be preceded by *on*. They are not so used by good English writers either of the past or of the present. And yet one can scarcely pick up a paper now-a-days without finding some one or more of these adverbs saddled with this impertinent preposition. Thus, "Sunday, at all times fertile in rumors, was particularly so *on yesterday*." "A great battle is not impossible *on to-morrow*." "On the morrow," as an equivalent of "to-morrow," is legitimate; but not "*on to-morrow*." As adverbs these words all involve the idea of "time during which." Thus, *to-day* means "on this day;" *to-morrow*, "on the morrow;" *to-night*, "on this night;" and *yesterday*, "on the day previous to this." Hence the *on* is superfluous, inelegant, and improper.

The same may be said of prefixing *on* to the phrases "last night," "last evening," "last week," "last year," "next Monday," "next week," "next month," etc. No speaker of any elegance or correctness will think of saying "On last evening," "On next Christmas," "On next Monday," any more than "On yesterday," or "On to-morrow." Still, it is perfectly legitimate and not inelegant to say "On Sunday last," "On Monday next," "On the fourth of July," "On Tuesday week," etc. Why there should be this difference, we may not be able satisfactorily to say. It belongs to the province of English idioms, and is one of those things uni-

versally recognized and observed by good writers and speakers.

5. Occasionally, after some form of the verb *to be*, a preposition is improperly prefixed to a noun in the nominative or its equivalent under the false impression of its being in the objective. The following are examples of this: "The first place we went to was *to* a meadow." "The only country in the world where there is true and false liberty is *in* the United States."—*Tablet*. "The best place in the city to buy hats is *at* Smith's." "The place of the next meeting has not been decided upon, but will probably be *at* New York." Here *to*, *in*, and *at* are severally redundant, and of course should be stricken out.

6. The phrase *in vain* is sometimes used where the sense requires the word *vain* only. "All his efforts were *in vain*," is an example of this, the meaning being that all efforts were useless, ineffectual. Properly *in vain* is an adverbial phrase, and hence should be used adverbially, not adjectively. The sentence "His labors were not *in vain*," is right if the meaning is that they were not put forth to no purpose. But, if the labors are designed to be described as useful and effective, *in vain* should be *vain*. The following examples will illustrate still further the needlessness of the preposition: "It is *in vain* [*i. e.*, idle, useless,] to extenuate the matter." "It is *in vain* for you to speak, he will not come."—*Fasquelle's French Course*, p. 188. "It is *in vain* for you to remonstrate with him."—*Ditto*.

7. With young and inexperienced writers it is a common error unconsciously to repeat a preposition improperly. Thus: "We may obtain approximations to the truth, *with* which, for want of better solutions, we are obliged to content ourselves *with*." "On what day did last January come in *on*?" "It was *at* one of these public houses we stayed *at*." In this last sentence the first *at* is the offender rather than the last; for the sentence fully and correctly expressed would be, "It was one of these public houses that we stayed at;" or, less idiomatically, "at which we stayed." In fact, writers of no little experience sometimes inadvertently err by thus repeating a preposition. Examples: "*In* what longitude, reckoning from the meridian of Green-

wich, would Madagascar be in?"—*Cornell's Int. Geog.* "Different kinds of wine are produced, according to the state of maturity to which the grape is allowed to arrive at before being gathered."—*Wilkes's Exploring Exped., Vol. I., p. 22.* "The mission on which most men and women are called to go upon, does not call them away from home."—*Ed. of N. Y. Observer.*

S. W. W.

THE STRUCTURE OF THE APPALACHIAN ZONE.

PART FOURTH.

IN this brief survey, we have seen that the mountains composing the Appalachian Zone are made up of strata similar to those now forming. From analogy as well as from internal evidence we know that these were once horizontal, whereas now we find them bent, folded, turned up on edge, and in some cases even fractured. We have seen also that the curves tend to become broader and less steep as we follow them north-westerly, the whole resembling the ripples caused by casting a stone into a body of water, abrupt near the point of concussion, but becoming broader and gentler as they recede. Can we, from these facts, write the history of these mountains and determine the nature of the mighty force which exerted so tremendous an influence?

Often has this question been answered affirmatively, but the interpretation of the facts differ. It would be out of place here to enter into an elaborate discussion of theories respecting the origin of mountains. Only two hypotheses will be given, both of which have attracted much attention, and both are based on the structure of the Appalachians.

In 1842 the Brothers Rogers, after years of investigation amid these mountains, presented their celebrated theory. They hold that the wave-like flexures of the Appalachian strata are the result of an actual onward billowy movement, proceeding from beneath; a combined vertical and tangential movement. They argue forcibly that no merely vertical, no merely horizontal movement, alone, could produce

the phenomena. The wave-like undulations of the ground during earthquakes, so well attested by many observers, seemed to afford the key. It was assumed, therefore, that the earth's crust in these disturbed regions, rested on a widely extended surface of fluid lava, and that the accumulation of a vast body of elastic gases and vapors subjected this portion of the crust to an excessive tension, causing it to give way at successive times in a series of long parallel rents. The removal of pressure upon the lava by the explosive escape of the gases, would cause it to rise along the fissure like an enormous billow and to lift with it the overlying flexible crust. Gravity would produce a violent undulation of the lava surface, wave succeeding wave, flattening and expanding as they proceed and imparting a billowy motion to the overlying strata. Simultaneously with each epoch of oscillation, the undulating tract was pushed bodily forward, and secured in its new position by the permanent intrusion, into the rent and dislocated region behind, of the liquid matter, injected by the same forces which gave origin to the waves. This thrust would steepen the advanced side of each wave, and if repeated, as it would be near the region of greatest disturbance, would produce the folded or inverted structure.

Prof. James Hall announced his theory in the *Palaeontology of New York*, Vol. III. He rejects altogether an interior force and regards the flexures as resulting from depression of the crust. He believes that the line of the Appalachian barrier is due to the original deposition of material, not to any subsequent operation dislocating its strata, and that the declination of elevation westward is due to the thinning out of the formations. He holds that when large masses of sediment are spread along the sea-bottom the effect will be a yielding of the crust beneath and a general subsidence. The greatest depression, accordingly, would be along the line of greatest accumulation, and the settling would be less in the direction of the thinning margin. By this process the lower side became stretched, rents and fractures would occur on that side, while the compressed upper surface would be wrinkled and folded. This can be easily shown by bending a young twig. The outer surface is

stretched and finally gives way, while on the inner side the bark is thrown into folds. This folding has not contributed to the height of mountains. On the contrary, the sharper the fold, the more likely it is to be split or weakened at the arching, and so to be more liable to the effects of denuding agencies. In this way is explained the existence of so many mountains with trough-shaped strata; these mountains being merely the troughs of waves whose crests have been washed away.

Here then are two interpretations of the same record, yet diametrically opposed. Rogers' theory accounts for most of the facts, but leaves us a task, as difficult as the other, to account for the theory. The means employed, according to these authors, are too terrific, without analogue anywhere. It is inconceivable, too, how the fluid matter could be sustained in the rents and hollows so as to render the elevations permanent. To Prof. Hall's theory the main objection is, that the material accumulating, as it certainly did, in shallow water, is incompetent to affect the earth's crust, which is not less than fifty miles thick. Indeed, there is reason to doubt whether the earth has merely a crust. Ten years hence we may all believe our globe solid. At the same time there is much in favor of this theory. It is competent to account for the succession of phenomena and is easily illustrated by experiment. A long continued subsidence certainly did occur in the Appalachian region, for there we find shallow water deposits, many thousands of feet thick, each showing by the ripple markings that it was near the surface when deposited. The character of many strata shows that the rate of subsidence at times must have been exceedingly small, only a fraction of an inch per annum. It is more than probable that such a sinking over an extended area would cause a corresponding elevation at some point. Where would we look for such an elevation but in the trough itself? As shown in the experiment of the bent twig, the folds are sharpest where the compression is greatest. By this theory faults and other phenomena are susceptible of easy and reasonable explanation.

The determination of the time during which the Appalachian Revolution occurred depends upon some principles

respecting which all geologists are fully agreed. The facts on which these are based need to be summarily recorded.

After a careful study of life as shown in the successive strata of the earth's crust, geologists have divided the world's history into seven great ages, each marked by the dominance of some form of life. Earliest among the stratified rocks we find an enormous accumulation, many thousands of feet in thickness, everywhere controlled and everywhere altered in their constitution, as though they had been subjected to a high temperature. In this process of alteration all traces of life, both animal and vegetable, would be obliterated, or at least rendered difficult of detection. Under such circumstances these rocks were classed together as belonging to the Azvic or lifeless age. Latterly, however, there have been discovered traces of life, low in order indeed, but still life, and so we know this immense series as the Evzoic, or the age of dawning life.

Resting on this contorted mass we find a succession of rocks, just such a succession as might be expected to rest on a continually subsiding sea-bottom, first a sandstone, then a mixed mass of sand and limestone, and finally a heavy limestone; a similar succession follows, the two series together making up the Silurian age, the age of mollusks or shell-fish. In this age no land plants existed, no mammals peopled the land, no fishes peopled the sea. Yet the rocks tell us that life in its lower forms was abundant, for some of the limestones are simply masses of shells tightly packed together. Stone lilies of wondrous beauty and complexity, waved to and fro on the bottom; uncoiled nautili, twelve feet in length, scoured the sea, myriads of little shells were everywhere, while tangled masses of strange sea-weeds grew in all the shallow waters.

Upon the Silurian, we find the strata of the Devonian age. In its earliest epochs we find a new form of life introduced, fishes, the first of vertebrates, appear in vast numbers; while corals, mollusks and articulated animals, so well represented in the previous age, still abound in the waters. We now find evidence of a main land, covered with soil and bearing vegetation, for even midway in its course we discover a few sea-drift logs of cone-bearing trees, carried

down some river to the sea, where, becoming water-logged, perhaps, they sank to be enveloped by the limestone forming below. Towards the close of this age, the evidences are more determinate, no longer mere fragments of wood, denuded of bark and rudely chafed by tossings on the water, but now branches of trees with bark preserved and even the leaves with all their striæ intact, so perfect as to admit of description.

Resting upon those of the Devonian, the Age of Fishes, we find the strata of the Carboniferous Age, the age of coal, of all ages the most important to man in its economic bearings. Here are our alternations numerous, sandstone, shale, coal and limestone, an ever-varying round, a complex puzzle, ever surprising the student with some new wonder. Here laid up for man's use are the coal and iron, the results of the labors of the plant-world for many ages, interstratified with shales and sandstones, the wash of the ocean shore, and limestone, the burial place of countless myriads of corals and sea-shells. Formed in marshes of vast extent and lining the sea-shore, the coal and its accompanying shales show no storm-tossed fragments of wood, finding here an accidental resting place. Here we find the primeval forests, standing as they grew, roots and trunks, while in, and directly above the coal we often see the impressions of their leaves, with those of humble ferns, all preserved as though they had been formed but yesterday, the fineness and perfection of their lines rivalling the most beautiful specimens of modern plants in our herbaria. Words cannot describe the matchless beauty of the roof as exposed by the removal of the coal beneath, where, in endless confusion, these impressions are spread out. Well have geologists called this the age of land-plants, for then, even in our latitude, the forests must have been as dense as similar low marshy regions of the torrid zone to-day. In the sea swarmed gigantic sharks, while mollusks, corals and stone-lilies still contributed to the richness of the fauna.

Next comes the Age of Reptiles. In the Devonian and Carboniferous seas fishes were supreme, but now the Reptiles. In the air the Pterodactyl, a flying dragon, with four feet spread of wings, fluttered in the stead of birds, on

the land were gigantic lizards seventy feet long, in the shallow waters the Plesiosaurus, with its large crane-like neck, lurked in the sea-weed, while farther from the shore, the huge Schthyosaurus, or fish-like reptile, scoured the sea for its prey. Strange animals these, descriptions of which "seem more like the dreams of fiction and romance, than the sober results of calm and deliberate investigation." Yet to any who will examine the evidence upon which our conclusions rest, no more doubt can remain that these once lived than can exist respecting the former life of the mummied men, apes and crocodiles now found in the catacombs of Egypt. During this age we have fishes still, corals, stone-lilies, mollusks and horse-shoe crabs, yet all inferior to the reptiles which now attain their maximum, and are henceforward to dwindle. On land we find a new feature, plants like those of our own time, but strangely mingled with others unrepresented to-day. Yet birds are almost wanting, and the mammalia are represented only by small insect-eaters.

Following this comes the Age of Mammals. Faintly foreshadowed by the little insect-eater, this age bursts upon us with all the grandeur of a new creation, without gradual evolution as in its predecessors. In the Bad Lands of our West, in the Gypsum quarries of Paris, in the Sinalik hills of India, we find the remains of huge mammals, which once swarmed over the surface of the globe, but which now, like the Great Auk of our northern seas, have forever disappeared, leaving behind them no descendants. During this age lions, tigers, elephants and hyenas of extinct species peopled the British Isles, associated with extinct species of rhinoceros and hippopotamus. In the Missouri country strange carnivorous animals allied to the hyena, dog and panther were associated with the rhinoceros, horse, deer and tapir-like animals. The elephant reached even to the borders of the great lakes, while the gigantic mastodon roamed over all our land east of the Mississippi. In the sea whales, seals, dolphins and the walrus lived. On the land birds were numerous, and the forests in which they sported wear a very familiar look. There were oaks, chestnuts, poplars, willows, tulip-trees and nearly all our common species. The lower orders of marine life are like our own.

In the early epochs no species are identical with those now existing, but later on we find twenty per cent., and at the close ninety per cent. of the shells undistinguishable from species of our own day.

Last of all the ages comes that for which all the others were preparatory—Man appears upon the earth. Now we find mammals, birds, reptiles and fishes. We have the articulates, the mollusks, and the corals, with their related sea-urchins and star-fishes; but as each grade in its turn gave way to one higher, so now do they all give way to man, for whose benefit they have been created.

Of these seven ages the first four are fully represented in the Appalachian Zone, and in the troughs bordering it on the east we see the earlier epochs of the fifth. It is evident that the great revolution forming this zone ended during the Carboniferous Age. The relative position of the rocks belonging to the Reptilian Age, and found in troughs along the eastern border, shows that they were deposited after the mountains in this vicinity had assumed their folded condition. To determine the time when this revolution began is attended with some difficulty. The Blue Ridge contains few strata younger than those belonging to the Eozoic Age, while in the other belts we find all the ages represented from the Eozoic to the Carboniferous inclusive. It would seem reasonable, therefore, to suppose that the operations producing the Blue Ridge took place at a much earlier date than those causing the other belts, or else that in the neighborhood of the Blue Ridge there was dry land from the Eozoic time till now. It is probable, however, that the whole Appalachian Zone is marked by the results of successive operations, and that the older mountains, those first formed, are in the south-eastern division.

The importance to us of the Appalachian uplifts can hardly be over-estimated. They have given birth to innumerable streams, which, cutting out the mountain sides and transporting the material thus set free, have found the alluvial plains of the Atlantic border and the Ohio valley, while uniting they afford broad highways for commerce. The waves of the strata have brought to the surface many beds of coal and iron, which otherwise would have been buried

so deeply that man could not have discovered them, or had he discovered could not have worked. Iron beds, well exposed and accessible in the Alleghany Mountains, lie eight thousand feet below the surface in the Ohio valley at the Kanawha River. At the same time many strata were changed in structure; bituminous coal became anthracite, coarse layers of limestone were converted into statuary marble, and the crude carbonates of iron were reduced to oxyds. It was only part of a far-reaching plan, in whose slow development the Creator looked forward to the introduction of man and prepared all things for his coming.

GEOGRAPHICAL NOTES.

NORTH POLE.—Examination of the survivors of the *Polaris* expedition by a Board appointed by the Secretary of the Navy, discovered no new facts in regard to the death of Captain Hall and the break-up on the ice, but made it certain that the former was purely natural (from apoplexy or paralysis), and that the separation of the party in the ship from that on the floe was accidental and unavoidable. Capt. Buddington, however, is shown to have been a hindrance to his chief while living, and to have had such an appetite for liquor as to make grog of the alcohol carried for scientific purposes. In Capt. Hall's writing-desk, which was preserved by the Esquimaux Joe, was found the original draft of a dispatch to Secretary Robeson, and this, together with the testimony of Capt. Tyson and Frederic Meyer, enabled the Board to arrive at the following summary of the geographical results of the expedition:

“The open Polar Sea, laid down by Kane and Hayes, is found to be in reality a sound of considerable extent, formed by the somewhat abrupt expansion of Kennedy Channel to the northward, and broken by Lady Franklin's Bay on the west, and on the east by a large inlet twenty miles wide at the opening and certainly extending far inland. Its length was not ascertained, and Mr. Meyer thinks it may be in fact a strait extending till it communicates with the Francis Joseph Sound, of the Germania and House expedition, and with it defining

the northern limits of Greenland. This inlet was called the Southern Fjord. North of it, on the same side, is the indentation of the shore, called Polaris Bay by Capt. Hall, where the Polaris wintered in latitude $81^{\circ} 38'$ north. The northern point of this bay was named Cape Lupton. Its southern point is yet without a name. From Cape Lupton the land trends to the north-east, and forms the eastern shore of a new channel from twenty-five to thirty miles wide, opening out of the sound above mentioned, to which Capt. Hall, as has already been stated, gave the name of Robeson's Straits. The western shore of these straits, north of Grinnell land, is also nameless. North-East of Cape Lupton, in latitude $81^{\circ} 37'$, is a deep inlet, which Capt. Hall called Newman's Bay, naming its northern point Cape Brevort, and its southern bluff Sumner Headland. The trend of the land continues to Repulse Harbor, in latitude $82^{\circ} 9'$ north, the highest northern position reached by land during this expedition. From an elevation of 1,700 feet at Repulse Harbor, on the east coast of Robeson's Straits, the land continues north-east to the end of these straits, and thence east and south-east till lost in the distance—its vanishing point bearing south of east from the place of observation. No other land was visible to the north-east, but land was seen on the west coast, extending north as far as the eye could reach, and apparently terminating in a headland 84 degrees north. Mr. Meyer also states that directly to the north he observed on a bright day, from the elevation mentioned, a line of light, apparently circular in form, which was thought by other observers to be land, but which he supposed to indicate open water."

The scientific observations and collections appear to have been very full and valuable, and it is to be hoped will be recovered by the relief expedition sent out in the steamer *Tigress* by the Secretary of the Navy. The St. John's correspondent of the London *Times* notes "one or two facts connected with the winter quarters of the *Polaris* in the most northerly latitude in which any expedition has ever passed a winter:"

"Captain Tyson describes the climate as being distinctly milder than it is several degrees further south. In June the extensive plain which surrounded the harbor in which the ship was ice-bound was free from snow, and such flora as those regions boast appeared. A scant, creeping herbage covered the ground, sufficient to nourish the numerous musk oxen which range these plains. Of these the Expedition shot between thirty and forty. That these animals can exist here through the Winter is a fact in itself indicative of a milder temperature. In midsummer, when the air was still, the sun was sometimes disagreeably hot, and it would seem as though, after passing the

icy barrier which extends from the 70th to the 80th degree, the climate became sensibly modified. No Esquimaux or Arctic Highlanders were met, but their traces were perceived; and what is more interesting is the fact that driftwood from the northward was picked up which had floated through Robeson's Straits, through which a southerly current runs of a knot an hour. It was too much decayed to show clearly the traces of having been sawn or cut. Besides, musk oxen, rabbits, and lemmings were abundant, one or two bears were seen, the wild flowers were brilliant, and numerous birds from southern latitudes came northward in the Summer; and some of the party ascended the high table-land which rose from the plain near which they were anchored, and which, in its turn, was overtopped by a higher range. A marked difference in character between the eastern and western shore was evident, the former being apparently more favored in climate and vegetation. The mountain ranges on the western side were far more rugged, barren, and precipitous. In mid-winter, notwithstanding this comparatively favorable account of the aspect and climate of the Winter-quarters, it was so cold that bullets of frozen quicksilver were fired through a two-inch board."

Mr. Clements R. Markham, of the British Arctic Expedition of 1850-51, writes to *Nature* (issue of May 29) as follows:

"The news brought by the boat's crew of the *Polaris*, if at all accurate, is very important. It proves that even such a vessel as the *Polaris* may advance up Smith Sound, in one season, to 82° 16' N. It is stated also that at, or near this point, the land, both of Greenland and Grinnell Land, was still trending northward. From such a point, an extended party, with dépôt parties, organised on McClintock's principles of sledge traveling, could reach the North Pole and return to the ship. Another important fact is that the *Polaris* was beset in 80° 2' N. and drifted out into Baffin's Bay. This shows that there is not a constant block of ice in the strait, but that the floes drift down with the current, leaving, as a consequence, an occasional navigable lane between the drifting ice and the land floe. These facts are most satisfactory, and increase the prospect of a successful exploration of the unknown region by way of Smith Sound."

BRITISH AMERICA.—Surveys are now going on to complete the definition of the forty-ninth parallel boundary between this country and the United States. The work has already been performed eastward from Fort Pembina to the Lake of the Woods. During the present summer the line will be extended from the Fort to the Rocky Mountains. The Hon. Archibald Campbell, of the U. S. Commission, has general charge and will make the report to Congress.

MEXICO.—Last month we gave some account of Commander Selfridge's interoceanic canal route by way of the Napipi and Atrato Rivers. Of the U. S. Nicaragua Survey for the same object we have little news to give, but there comes from it no such triumphant note as from Commander Selfridge. "*If a canal is ever put through,*" we read, "*it will have to occupy the valley of the San Juan River.*" The Tehuantepec survey, under Commander Shufeldt, has published a full report of its explorations, which enables us to compare its route (via the Coatzacoalcos River) point by point with that *via* the Atrato: 144 miles of canal against 28; 140 locks against 20; 732 feet summit level against 128; a feeder 27 miles long, involving three miles of traveling and some heavy cutting, against no artificial feeder. For the remainder of its construction the Tehuantepec Canal will be, if not easy, at least not impossible. Probably, we infer, the job will be a slighter one than Selfridge's three miles of gigantic tunnelling, and three of open cuts. As for expense, Commander Shufeldt hazards no precise estimate, but intimates that it would be too great for private capital. Then he frankly enumerates earthquakes, heavy north and south winds, and an anarchic society (State of Oaxaca), as obstacles not to be despised.

—"It is estimated," says the report from which we have been quoting, "that of the 8,000,000 inhabitants of the Republic of Mexico, 5,000,000 are Indians, direct descendants of the Aztecs and other aboriginal tribes and races:"

"The Indians are found settled over the whole Isthmus, generally living in towns or villages, or large haciendas. They are of a mild and gentle disposition, little inclined to war or cruel practices. They seem to have but little natural fondness for hunting, although the country abounds in game. The men are rather smaller than the Indians of our own Western plains, but, nevertheless, they are very muscular, and possess, many of them, wonderful endurance. In color they are lighter than our own Indians, and their features are much finer, and the expression of the face is more pleasing. . . . These people are invariably hospitable to strangers, and often cheerfully give up their bed and hammock for their accommodation, for which they never make any charge; but if any food is taken they expect to be paid for it. The dogs, pigs, and chickens occupy the house in common with the family. The women perform all the house-work,

assist in cultivating the milpas, and prepare and cook the food. They rise before the men in the morning, often as early as three o'clock, and begin the preparation of the morning meal. We found the Indians remarkably honest and faithful attendants, and not one of our party had anything stolen during our residence on the Isthmus. The robberies in Mexico are rarely committed by this class."

—We may venture on one other extract, as it opens up an interesting subject :

"We expected to encounter a great many serpents on the Isthmus, and each person, therefore, went fully prepared with the means for applying an antidote at a moment's notice, should he be bitten ; but during our residence there we saw only a very limited number of serpents, the most of which belong to species that were quite harmless. No one of the party was bitten, or even attacked, notwithstanding the fact that our explorations led us into the densest forests and the most unfrequented regions. . . . We heard of several deaths that had resulted from the bites of serpents. But these cases are very rare, probably not more frequent than similar occurrences in our own forests."

This is quite in keeping with the subjoined paragraph, which we clip from *Nature* :

"There is a very good article in the *Field* for January 4, exposing some popular delusions with regard to the dangers incurred by living in or traveling through countries where snakes are abundant. The writer thinks it would be difficult to produce a well-authenticated instance of a European having been killed by a snake in any tropical country. Many of these delusions the writer ascribes to the sensation stories found in some popular novels, *eg.* 'Tom Cringle's Log,' and some of Marryatt's works, as also in the narratives of credulous travelers, and even in the works of such an eminent ornithologist as Audubon. 'The actual risk incurred,' the writer says, 'by those who visit and explore the haunts of snakes is practically so inconsiderable as very soon to become habitually as much disregarded as is the existence of the common adder in this country.'"

To the same effect speaks the late Mr. Charles Waterton in his "Essays on Natural History" (London, 1871) :

"When I was in the forests of Guiana, I could never coax an Indian to approach a snake with composure, although I showed him that no danger was to be apprehended if he only went the right way to work..... Snakes are not revengeful ; neither are they prone to be the aggressors..... In no instance have I seen a snake act on the offensive..... *Noli me tangere*—do not touch me with intent to harm me, is a most suitable motto for a snake..... Confiding in the

notion that snakes never use their poison-fangs, except when driven to extremities, I would rove in the forests, day after day, without shoes or stockings, and never consider myself in danger from them. . . . When a man is ranging the forest, and sees a serpent gliding towards him (which is a very rare occurrence), he has only to take off in a side direction, and he may be perfectly assured that it will not follow him. . . . A man may pass within a yard of rattlesnakes with safety, provided he goes quietly; but should he irritate a rattlesnake, or tread incautiously upon it, he would infallibly receive a wound from its fangs."

AFRICA.—The mail facilities of Central Africa have enabled a letter from Dr. Nachtigal to reach Gotha in fourteen months. The course of this celebrated German explorer has been as follows: He left Tripoli Feb. 18, 1869, on a mission to the friendly Sultan of Bornu, bearing sundry royal gifts from the Emperor Wilhelm. Arriving at Murzuk (oasis of Fezzan) March 27, he was prevented from proceeding southward till April 18 of the following year (1870). The interval was utilized by making a hardy excursion to Tibesti (June 6 to Oct. 8, 1869), in the eastern half of the desert of Sahara. He finally reached Kuka, the capital of Bornu, July 6, 1870, delivered his presents, and was very well received. At this city he lingered till 1871, hoping to obtain an opportunity, which his slender resources almost denied him, of exploring the country northeast of Lake Chad. This he accomplished in the course of the year, visiting the adjacent states of Kanem, Egai, and Bodele, as far as Borku, during a space of nine months, and obtaining most interesting information concerning the physical features of the region, its productions, inhabitants, customs, etc. Borku was found to lie in a depression lower than the level of Lake Chad, whose waters it drains through the Bahr-el-Ghazal (not to be confounded with Schweinfurth's Nile tributary of the same name.) This river has hitherto been supposed to flow into Lake Chad. Its course is northeast, and about 320 miles in length. The Borku basin rises on the north into a mountain range, whose pass is at least 7,878 ft. high, and which stretches in a gigantic circle from Tibesti to Durfur. Dr. Nachtigal reached the 18th parallel in this journey, and approached within 150 miles of his old route to Tibesti, so that his explorations now form a con-

nected series of great magnitude and importance. At the date of his writing from Kuka, Feb. 23, 1872, he was on the point of essaying a new journey to the south of the lake, in the country of Baghirmi, whose capital, Massena, had just been captured by the enterprising Sultan of the powerful state of Wadai. The *Academy* of May 15 remarks on these discoveries:

"It will be seen that Dr. Nachtigal's travels have already opened out a vast region of the Eastern Sahara. No mountains approaching the altitude of those which he has found in Borku have hitherto been discovered in any part of the Sahara region west of the Nile or between the Soudan and the Atlas range. His determination of an outflowing river from Lake Chad is also of the highest interest in its bearing upon a contested point of physical geography—whether all lakes without an outlet are necessarily salt or brackish. Lake Chad, the waters of which are certainly fresh and potable, has been held up as the great exception to this rule, and the equilibrium has been believed to be maintained by great evaporation alone. Dr. Nachtigal's discovery, however, places Lake Chad precisely on a parallel with the corresponding Lake N'gami in the southern area of African continental drainage, which overflows periodically by the Zouga, and with Lake Titicaca in the Bolivian highland, discharging its surplus waters to the Pampa Aullagas lake by the Desaguadero."

—The French ship *Narval*, Commander Mouchez, left Lorient May 1, for a five months' cruise on the coast of Algeria. Under the direction of Prof. H. de Lacaze-Duthiers (zoölogist) and M. Vélain (geologist) of the Paris Faculté des Sciences, the hydrographic map of these shores will be completed. The professor will make frequent soundings, and study the fauna of the Mediterranean.

AUSTRALIA.—In India it is the elephants that endanger the telegraph by rubbing against the poles. In China, the cable is at the mercy of thieves, who not only cut it and carry it off in the modest lengths of a yard or two, but have even stolen it by the mile and a half! They twist the thicker iron wires of the outer coating of the cable into mooring chains for native fishing boats; fashion the smaller wires into fish-hooks; and sell the copper cover for divers uses. In North Australia white ants are the particular pest of the poles:

"It appears that they devour the growing trees, and sometimes eat off the living boughs. The rapidity with which they consume even well-dried timber is astonishing. It is put into a roof to-day, and before a week fine powdery dust is observed falling from it as the minute agents of destruction are at work. Wooden buildings must be renewed every three or four years at the farthest. But this interesting insect appears to have an especial 'down' on the telegraph poles. Many of them are scooped out and honey-combed, and now stand mere shells, waiting for the first strong wind to blow them over. The insulation pins are coated with a non-conducting varnish, but it makes no difference, they are riddled and eaten up bodily by the ants. They have not yet taken to eat the wire, but it seems likely that very soon there will be nothing left but the wire. It appears that before long it will be found needful to reconstruct the line with iron posts through the territory thus infested."

Bibliography.—JENNESS, JOHN SCRIBNER. The Isles of Shoals, an historical sketch. New York: Hurd & Houghton.—MARKHAM, A. H. Cruise of the *Rosario* amongst the New Hebrides and Santa Cruz Islands. London.—SAINT-MARTIN, VIVIEN DE. L'Année Géographique. [Geographical Annual for 1872.] Paris.—THOMSON, J. Illustrations of China and its People. Two hundred photographs, with descriptive letter-press. London.

Cartography.—Petermann's *Mittheilungen* for May 8 has maps of the Russian campaign against Khiva, and of Ernst Giles's travels in Central Australia. Stieler's Hand-Atlas, Part 13, contains maps of Greece and the Archipelago; the East India Islands; and the United States (4th section).

Photography.—Readers (and haply writers) of Geographical Notes must have their summerings, and one of the most delightful functions of the stereoscope is to guide us in our choice of a rural retreat. Of this sort of friendly service there might be, we need not say, no end at the Messrs. Anthony's. Indeed, one might almost consent to commute his real excursion to "fresh woods and pastures new" for unlimited ranging on a world-tour through their shelves. All that we shall venture to do this month is to name a few of the picturesque nooks in which our beautiful country abounds.

(a) Western readers will not object to our mentioning only Eastern resorts. Any one who has visited the watering-places of New England knows that Western tourists, eager for a glimpse and a sniff of the salt sea, nearly monopolize some of them. How it is at the Delaware Water Gap, we do not know. Here, in No. 2232, we have a view of *Marshall's Falls, from the Ravine*. It is a tiny cascade, comparatively, seen through a rock opening; athwart the picture leans a tree which was long ago thus inclined, for the branches on the upper side, whose foliage is dimmed by the strong light, have sought by

shooting up straight to compensate for the want of perpendicularity in the parent stem. From the Delaware River to the Housatonic: No. 120, *The Falls below Milford, Conn.* Should we read here "New Milford?" or is the tranquil stream here pictured the Wopowang, which empties into the Sound three miles eastward of the Housatonic? In either case, these peaceful hillsides powerfully invite to relaxation and dreamy dozing. Following up the valley of the Housatonic we come to *Monument Mountain, Stockbridge, Mass.* Nos. 6338, 6339 are charming outlooks from this famous eminence, perhaps taken from the Pulpit Rock which we remember to have climbed for the prospect in 1859. As boys we enjoyed about equally the munificent expanse eastward and—the huckleberries with which the summit abounds! And now, seated cross-legged on our magic carpet, let us transport ourselves to Nantucket, and learn a little natural history from Mr. J. Freeman's views of *Cutting a fin-back whale*, the several parts being hooked on board the whaler as the carcass lies along side. Some beauty, too, is here to please the eye in the concentric (elliptic) lines of this whale's belly. A flower-petal is not more delicately marked. The body is 60 feet long, and will yield 23 barrels of oil.

(b) Geography in its broadest sense includes history, and in its narrower includes ethnology—the knowledge of the inhabitants of a country as well as of its rivers and water-sheds. In this department, too, the stock of the Messrs. Anthony is extremely rich. Generally their views of famous men and women of the time are not stereoscopic, yet not a few are. For example, the representative *par excellence* of the American ministry, Henry Ward BEECHER is admirably portrayed by Gurney & Son. The prince of "agitators," Wendell PHILLIPS, has justice done at once to his handsome features and to his character in Sarony's portrait of him. A typical American traveler (not the highest type), and also a typical American man of letters (again not the highest), is seen in the fur-capped Bayard TAYLOR (Sarony). A loftier poet, whose face is familiar to all, we recognize in William Cullen BRYANT (*ib.*); and poet and humorist of a later school is Bret HARTE (*ib.*) Still another type of our versatile American humor we need not be ashamed to exhibit—"Josh Billings" (Gurney)—a sober-looking man as he walks the streets; here with a bare suggestion of a roguish twinkle in the eye, as if the thought of a "mule" had crossed his mind. A funny genius, if not a positive humorist, exists in the person of P. T. BARNUM (Howell), who shall stand to-day in our catalogue as the type of American humbug, money-making, indomitable energy, unscrupulousness—of a great many virtues and some national defects and vices. Mr. B. Gratz BROWN (Sarony) will serve, as well as another, as a type of politicians; Gen. GRANT (Gurney) as a politician in spite of himself; Gen. Robert ANDERSON (Gurney) as a soldier who did his duty when politicians failed in theirs. Of foreign celebrities we can adduce only those who

have in a manner naturalized themselves: Christine NILSSON (Gurney), less an artist and less a woman than is both artist and man Anton RUBINSTEIN (Sarony), whose head is that of Beethoven's beautified, and his expression wonderful to behold as he loses himself in his performance.

LEIF ERIKSON.

IT has lately been proposed to erect a monument to Erikson as the discoverer of America, and however strangely it may sound to associate his name with that event, his claims to the honor appear to be of no little weight. They rest not only upon the ancient Norwegian accounts of his landing in "Vinland" or "Wineland," but also upon monuments found in this country, of which the celebrated "Dighton Writing Rock" inscription is the most important. All that we know of Erikson is that his father Erik the Red emigrated from Norway to Iceland, from which country he was banished for murder, and that he finally settled in Greenland. He made frequent voyages between his home and Iceland, being accompanied by Herjulf Baardson and his son Bjarne. On one occasion Bjarne was in command of a vessel sailing to Greenland, when he was surrounded by a dense fog and driven by a strong wind to the American coast. He did not disembark, but returned home and reported the discovery.

"Leif Erikson bought Bjarne's ship and undertook the voyage with thirty-five men, of whom several probably had followed Bjarne. He sailed directly to Helluland, which he named so on account of the appearance and nature of the country. Their description of the country agrees with what modern teachers say of New Foundland. From this land Leif sailed southward, and after a voyage of three days came to a land which they called Markland, on account of its extensive forests. Their description of this country, with its low shores, white sandhills and wooded regions, agrees entirely with the present Nova Scotia, New Brunswick and Lower Canada. From Markland Leif sailed two days to Vinland, which, judging by the time taken in reach-

ing it, was fifty to sixty miles (Norw.) farther south, and this part of America agrees fully with the description Leif gave of it. He says the land had no mountains, that it was covered with woods and low hills. Leif built houses at Mount Hope Bay, through which Taunton river empties into the sea at Seaconnet Point. The saga-writer makes an astronomical remark, which leads us to find the place at which Leif settled. He says that on the shortest day of the year the sun rose at 7h. 30m., and set at 4h. 30m. According to this, the latitude of the place was $4^{\circ}, 29', 10''$, which coincides with Seaconnet Point and entrance to Mount Hope bay. The products found by Leif were the same that now enrich those beautiful regions. Grapes grew abundantly without cultivation as well as maize, called in the *saga*, wheat; and forest and sea yielded in abundance the same kinds of game and fish as at the present day."

Prof. Charles Rafu, who ranks as the first authority on Northern antiquities, has translated the ancient Norwegian accounts or *sagas* which relate the history of Erik, and he vouches for their genuineness. Those who have seen them, or *fac similies* of them, declare that they are free from modern interpolations. The truth of the statements made in these *sagas* is further confirmed by the writings of Adam of Bremen, who visited Denmark, and there heard of this newly discovered land. It is also a noteworthy fact that Columbus was in Iceland in 1477, and may there have heard accounts which either strengthened, or even originated the purpose which he afterwards carried out. Of the relics of the Norwegians in this country the "Dighton Rock" is, as we have said, the most important. In the year 1000 Erikson is said to have landed near Fall River, Mass., and to have spent the winter there. Seven years after, Thorfinn Karlsevne reached the coast, and left the inscription on the rock of which we are speaking. *Orfine* is still to be traced on it, and the number CXXXI, which was probably the number of the exploring party. The figures of a woman and child are also visible, which may commemorate the fact that, during their stay there, Karlsevne's wife bore him a son. Besides these evidences an armor was dug up many years ago at Garnet Point, Mass., which Berzelius, the

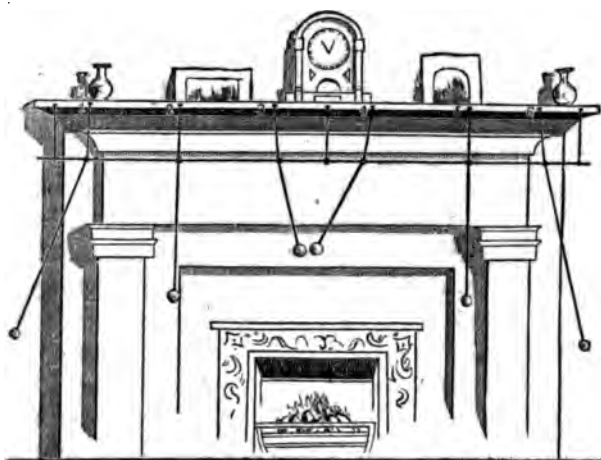
famous chemist, declared to be identical with the Norwegian armor of the tenth century. The "Old Mill" at Newport is also regarded by some as a relic of the Norwegian occupation. Should the truth of the testimony adduced be proved, we will be obliged to grant to the Vikings or Norsemen the honor of discovering the American continent, at least the eastern side of it. The credit of being the original discoverers may be due to some of the Mongolian races, who crossed by Behring's Straits, and settled in Mexico and Central America.

RESONANCE.

THOSE of our readers who remember when the suspension bridge at Niagara was completed will doubtless recall the interesting fact, that, when a dog ran slowly across the immense structure, it was observed to vibrate or swing more, from this apparently slight cause, than though it were being crossed by a flock of sheep or a drove of cattle. This rather startling result was due to the fact, that the dog, by his regular, swinging gait, transmitted to the bridge itself a similar motion, and that at length this swinging became not only readily perceptible, but often violent. To avoid a similar result, it is the custom, when a body of soldiers cross a bridge of this construction, to compel them to break step. This phenomenon of responsive vibration is known in physics as resonance; and it is not always necessary that the solid bodies thus affected be in actual contact, as may be illustrated in the following manner: Let the reader place his lips near the sounding-board of a piano, or other stringed instrument, give a short, sharp whistle, and then listen intently, with his ear close to the wires. It will then be noticed that the instrument has taken up the note from the lips, and responds to it in the same key. If the proper apparatus were at command, we might discover, moreover, that the wire giving forth the responsive note was the one that, owing to its length and size, vibrated in

waves similar to those produced by the lips of the whistler, and that the motion was transmitted from the one to the other through the air. In like manner, fine jets of flame may be made to vary in height by the sounding of musical notes. Even a stream of falling water is made to change in its vibration by the sound of a human voice, or the same effect is produced by a note struck from a violin. In each of these cases of the piano, the gas-jet, or the water-fall, the intervening medium along which the vibrations were transmitted was the air.

Another method by which these vibrations are transmitted is best illustrated by the accompanying engraving,



Method by which Vibrations are Transmitted.

which has been prepared so that the experiment may be readily repeated by any one interested in the subject. The engraving illustrates, perhaps, the most wonderful and mysterious feature of this law of resonance; since, as we shall see, not only can motion be transmitted along solids of any length, but two or more sets of vibrations will pass along the same body at the same time, without interfering with each other, and yet causing only those bodies to respond which vibrate in unison.

Across the top of the mantel, as shown in the figure, a narrow strip of board is so placed that its edge shall project

slightly.' About four inches below this board a stiff piece of wire or thin strip of wood is suspended, being held in position by three short cords, a centre and two end ones. At six equidistant points along the edge of the board suspend that many pendulums made of cord, attached to large bullets or smooth pebbles. In arranging these pendulums, let 1 and 6 have cords of equal length; also 2 and 5, and 3 and 4. Each cord must also be twisted around, or knotted to, the suspended wire, as shown in the figure. Thus prepared, the apparatus is complete. If now we set No. 1 ball swinging gently on a line with the wire and mantel,—that is, from right to left,—it will be observed that No. 6, which is the only pendulum having a cord of equal length, will at once respond, the others remaining quiet or nearly so. No. 6 starts slowly at first, but increases in the extent of its movement until it becomes more violent than No. 1, which now swings more slowly, till it comes to a dead stop, when it again starts, and No. 6 becomes quiet in turn. Now, if while No. 1 and 6 are still swinging in the manner described, we start No. 3, we shall notice that No. 4, its partner, takes up the motion, and goes through the same performance as No. 6; and while these four are vibrating back and forth, each in response to its companion, Nos. 2 and 5 still remain at rest. If either of these be started, the other would respond, and thus along this solid body we have transmitted three sets of waves or vibrations, which, without interfering with each other, are able to make only those weights respond which are attached to cords of equal length. Having thus placed in the reader's hands, by the aid of an illustration, the apparatus needed, it is hoped that enough of interest will be awakened to induce further study of this and other kindred phenomena.—*Industrial Monthly*.

HON. J. R. BUCHTEL, founder of the college in Ohio bearing his name, has offered to give \$20,000 for a woman professorship in it, provided the women of the State will subscribe an equal sum to complete the endowment.

CREAM OF THE EDUCATIONAL MONTHLIES.

THE principal articles in the June number of the *California Teacher* are, Fundamental Principles of Teaching Language, Object Teaching, (both translated from German,) Froebel's Kindergarten System, and Crumbs of Literature. In the latter the writer suggests that we should pay more attention to English Literature, and make it attractive by interesting pupils in the authors personally. A short biography, not simply the date of birth and death, but a few anecdotes of an author will do much toward awakening an interest in his works. The idea is a good one, and with a little trouble teachers could make it productive of good.

AMONG the subjects which receive attention in the *Connecticut School Journal* we notice, The Teacher for the Times, Normal Teaching, What is it? A Word to Acting Visitors, Recent Decisions in School Cases, and The Self-Reporting Problem. The latter discusses a subject which has troubled every teacher, and some good points are given by the writer, who favors self-reporting rather than the system of spying, which some teachers practice. She omits, however, to mention one very important point in keeping order in school, and that is that there shall be as few rules as possible. Teachers should explain that the object of all the regulations is to conduct school exercises in the way best calculated to benefit the pupils, and that they are not for the personal gratification of the instructor. When pupils understand this, and know that no unnecessary rules are made, they will more readily obey them, and the result will be beneficial to both teacher and taught. We are sorry to find such wretched book reviews in so excellent a publication as the *Connecticut School Journal*. Since January it has praised *everything*, which is right enough when deserved, but in its "Book Notices" we find indiscriminate praise awarded to some very indifferent books.

Maine Journal of Education. Contents: The Bodies of the Saints, Moral Instruction in Public Schools, An Out-

look, and Style in Teaching. The article of the most practical importance, though not the most carefully prepared, is The Bodies of the Saints—saints in this case being teachers. Their ill health is ascribed to worry, want of exercise, and improper ventilation of the school room. The two latter, we think, are the chief causes of the billiousness of so many teachers, and the lack of ventilation has much to do with the dullness of the pupils. The air in the school room should be changed at least four times a day. Exercise is a *duty* for teachers, a duty to themselves and to their scholars. A half-sick instructor makes dull work of it, do the best he may. In the article we refer to another cause of ill health is given—"starchiness." However, we do not believe anyone ever died of that, and the writer seems to forget that dignity is natural to some people.

The Intelligence Department of the *National Normal* is always full and interesting. Foreign Educational Veneering, Teutonomania, and some Foreign Correspondence form the body of the June number. "Shoddyism" receives a terrible "setting down." It seems that it is responsible for sending so many of our young people to Germany to study. The fact is that those who go to Germany are almost without exception college graduates. They have gone as far as they can go here, and, not wishing to stop, they continue their studies abroad. It is simply the action of the law of supply and demand. If we had a university here, it is unlikely that our youth would go three thousand miles to attend one. The writer says: "We have all known many instances of persons filling professional chairs, editing educational journals and occupying other high positions, who though lacking ordinary mental capacity, glory triumphantly in a fine coat of educational veneering received at some foreign university, usually in Germany, the language of which country they can not speak." This is sheer absurdity, for if they cannot speak German they cannot understand it, and without that it would be impossible to get even a "veneering."

THE *New York State Educational Journal* discusses The Bureau of Education, Trained Teachers, State Aid to Acade-

mies and Union Schools, and various other topics. It also has a tilt at Algebra, and wants to drive it out of the schools, at least one of its writers does. As is justly remarked, there is nothing in it to "cheer in the midst of toil;" very little hilarity would result from saying a formula or two when one was blue, and, as a provocative of mirth, Algebra is hardly to be defended. We think it, however, a good discipline for the mind. After all, we do not go to school so much to learn, as to *learn* to learn, and everything which strengthens the mind is valuable.

Progressive Discipline, The Health of our Children at School, our Habits of Reading, Government of Schools, and Teachers and School Committees, are some of the articles contained in the *Rhode Island Schoolmaster*. The paper on the health of school children is the second part of a very sensible discussion of that subject. The "hot house" pressure, and the practice of making children work when they should be at play, receive due condemnation. The writer touches a more potent cause of the languor often observed in school children in the late hours which some are allowed to keep. Many children are at parties, or are sitting up to read, when they should be in bed. We all know the proverb—"Early to bed, early to rise," etc. Its practice will give us health at any rate, and that is of more importance than riches or wisdom.

Old and New for July is largely devoted to colleges. There is much more of the "old" than of the "new" in its notice of RUTGERS. Theodore Frelinghuysen figures as a professor. He was formerly president, but died some eleven years ago.

A BOSTONIAN who asked his boy what he had learned at school one day, was told that his lesson had been: "Johnny shut yer jaws and can't run." He went to the school the next day, heard the teacher tell the boys to repeat, "A comma is just a pause to count one," and then heard the class all shout in unison: "Johnny shut yer jaws and can't run." Explanations followed, and that teacher is now striving to acquire more distinct enunciation.

CORRESPONDENCE.

MR. EDITOR,—In an article, in your May number, entitled "*Popular Errors as to the Sun's Time and Place*," there are several errors, which I am sorry to see, and for which I find it difficult to account. As one of them may mislead persons not well versed in the case, will you not do them and me the favor of correcting it?

On page 192, it says, "If any one wishes to determine the exact point east from his door, let him on the morning of either of the equinoxes, note, on the distant horizon, the tree-top, or house, or mountain crag, over which the centre of the sun passes in rising." This is all right; but the next sentence is: "Nor will any difference be made in the result if, by reason of the observer's place being in a valley or on a ridge, that distant crag or tree-top should be far above or far below the astronomical horizon; for the sun's centre will be upon the east and west lines through *the whole of the revolution*, that day and that night."

Now, there *will be* no difference made if the reader will keep his mind fixed, (as the writer kept his) on the fact that the sun's path that day is in the *celestial equator, whose plane cuts the horizon in points due east and west*. But most people, instead of this, and very naturally, will judge of the sun's place by supposing a plumb line dropped from *his* place in the heavens to *its* place upon the horizon, and that will certainly *not be* east or west. For at *meridian* of that day the shadow of a plumb line will be thrown due north, and at 9 o'clock or 3 o'clock the shadow will fall north-west or north-east; showing that the sun's place at these hours is respectively due south, south-east or south-west. So much for correction of Error No. 1.

The second is so evidently a *slip* either of the types or of the transcriber's pen, as scarcely to call for notice. On the same page (192) and sixteen lines from top, the article speaks of the sun's "place of rising and of setting" at the summer solstice, as being so "many degrees north of east." Any intelligent reader will, in his mind, either omit the words "and of setting" or supply the words "or of west."

At the close of the next sentence occurs Error No. 3. Speaking of the sun's momentary risings and settings, at the two solstices, to persons living just below the polar circles, it says that "these momentary risings and settings are always *due south*," whereas it should have said "*due north*, or *due south*." But these last two errata can do no harm by misleading. They only mar the article.

Respectfully yours,

F. R. GOULDING.

"SITTING OR SETTING?" AGAIN.

MR. EDITOR:—A communication from "S. W. W." with the above-named title, in the May number of your journal, has interested me so much that, with your indulgence, I respectfully submit the following on the other side of the question:

It is true that the verb *set* has a transitive and an intransitive sense; but the latter is its exceptional use, which is more generally supplied by the verb *sit*. Webster says: "*set* is the factitive or causative verb of *sit*."

What learned authorities your correspondent may have consulted when he remarks: "In speaking of their [hens] character or habit as incubators, we should say 'setting hens,' not 'sitting hens:'" I do not know; but this I do say, that I nowhere find his dictum sanctioned by Webster or by Worcester, standards justly regarded by Americans as final.

The former's definition of *sit* (No. 6), is to incubate; to cover and warm eggs for hatching, as a fowl. So says Worcester (No. 8), substantially. Neither lexicographer gives a kindred meaning to *sit*, intransitive.

"S. W. W." says that a sitting hen is not necessarily a setting hen, or, rather, what he calls a setting hen. Perhaps not: how does he mend the matter by the unauthorized use of *set*? Persons who, like the agricultural editor, believe in following approved models of expression are not likely to be misled, seriously, when told that a certain fowl is sitting; and if confusion of thought should arise, the difficulty would not be obviated by the barbarous substitute, *setting*.

I am sorry that this issue has been made public on the

page of so eminent a periodical as "THE MONTHLY;" for the article mentioned takes a stand around which the defamers of our mother tongue will gladly rally. Surely, one of the first duties of American teachers should be to guard their pupils, by precept and by example, against the affectations of pedantry and the vulgarisms of the street. Into what company "S. W. W." would lead us, I leave your discerning readers to determine.

S.

EDUCATIONAL INTELLIGENCE.

ARKANSAS.—During the past year many districts erected new school buildings, and in other ways increased their educational facilities, expecting to meet the expenses incurred by an increased rate of taxation. In some sections, the local boards were extravagant, and authorized enormous assessments. This was seized upon by the enemies of the free school system as a pretext for obtaining the passage of a law by the Legislature, limiting the school-tax to one-half of one per cent. That body also ordered the issue of interest-bearing certificates, and made them receivable for school taxes. This paper has depreciated, until now it is worth only one-half its par value. The effect has been that the districts are unable to meet their pecuniary obligations, and many teachers have left the State. It is to be hoped that the Legislature will, at its next session, repair the damage done. The report of the Circuit Superintendents are so imperfect, that it is impossible to exhibit the true condition of education in Arkansas. The present year shows a decrease of 37,064 in attendance, and there are 93 less teachers than at the previous report. We have no means of knowing the increase of the school population of the State.

CONNECTICUT.—**HARTFORD.**—Mr. Joseph Carew and his wife have given \$5,000 to Hartford Seminary, the income of which is to support a course of lectures, to be open to the public as well as to the students.

NEW HAVEN.—One hundred and twelve students graduated from the academic department at Yale on Thursday, June 26th.

KANSAS.—EMPORIA.—Commencement at the State Normal School was made the occasion of dedicating a new normal school building. It cost \$65,000, and is capable of accommodating 300 students. There were only three in the graduating class this year.

LOUISIANA.—Political disturbances have had an injurious influence upon the schools. Funds to defray the expenses are not forthcoming, and indeed were all the appropriations promptly paid, they would still be insufficient. The Superintendent of Public Instruction says: "The taxable property of this State is estimated at \$251,000,000. The assessment of the two-mill tax on this valuation gives the schools of this State a gross revenue of \$500,000. This is not enough to educate one-half of the children in the parish of Orleans. If the entire school revenue from all sources in the State, the two-mill tax, the interest on the sales of school lands, the license of the Louisiana State Lottery (a stain on the General Assembly), the seminary fund, the poll tax, and the city school tax, was given to the School Board of New Orleans, they still would not have means sufficient to maintain the schools needed for her own children." The educable population of the parish of Orleans is 90,166; that of the State 280,384. The returns made by district superintendents are so incomplete that we are unable to determine what advance has been made since the last report.

MARYLAND.—The school population is 114,974; average daily attendance, 55,168; the number of teachers, 2,333. Total expenditure for public school purposes, \$1,238,101.30. Outside of Baltimore eight new schools have been opened, and twenty-eight new teachers have been employed; but while there has been an increase in the number of teachers, there has been a decrease of \$24,297.25 in the salaries paid. The number of pupils has decreased 2,286. The State Normal School is prospering, having 162 students. •

MICHIGAN.—The Superintendent of Public Instruction, whose term of office has recently expired, gives a short review of the changes which have taken place during the past eight years. He says: "I entered upon the duties of the office, Jan. 1, 1865. The report of my predecessor showed the number of children between the ages of five and twenty years, to be 280,772. The whole number attending school that year was 215,736. The value of school-houses and lots was \$2,085,372. The number of graded schools was 123. The whole number of qualified teachers was 8,816. The whole amount paid for teachers' wages was \$591,335.33.

"Such are some of the leading statements, concerning the condition of the schools at that time.

"The following statement shows their present condition: The number of children between the ages of five and twenty years is 405,026. The whole number attending school the past year is 303,212. The value of school-houses and lots is \$7,469,296. The number of graded schools is 292. The whole number of qualified teachers is 11,642. The whole amount paid for teachers' wages is \$1,658,891.54."

NEW JERSEY.—The total amount raised for all school purposes is \$2,263,070.30; total value of school property, \$4,966,788; total number of children between the ages of 5 and 18 years, 279,149; attendance at public schools, 180,514; attendance at private schools, 35,305; non-attendants, 63,330. We note with pleasure that while the number of teachers has increased by 144, the salaries have been raised; males receiving \$4.77, and females \$2.23, more per month. Of the 144 new teachers only 3 are gentlemen. Under the present law all public schools are free, and, during the past year, the first of the working of this system, it has proved highly satisfactory.

NEW BRUNSWICK.—The graduating class at Rutgers numbered 39. The degree of LL.D. was conferred on David Murray, Ph.D., formerly professor of mathematics at this venerable institution, and now Commissioner of Education for the Japanese Empire.

ITHACA.—98 students graduated from Cornell University this year. 58 have applied for admission, of whom four are

ladies. Mr. Hjalmar Hjort Boyeson has been appointed professor of the Scandinavian languages.

NEW YORK.—NEW YORK CITY.—The fourth annual commencement of the Normal College took place at the Academy of Music, on Tuesday evening, July 1st. The exercises, which consisted of recitations, songs, and essays, were presided over by Mr. Wm. H. Neilson, President of the Board of Education. The graduating class numbered 78.

RHODE ISLAND.—PROVIDENCE.—The commencement exercises of the Normal School were highly interesting, consisting of the reading of essays, and the rendering of musical selections by the pupils.

The principal made his annual report, and delivered an address to the graduating class, 34 in number. Gov. Howard awarded the diplomas. The whole number of pupils attending the school during the past year was 156.

The graduating class of Brown University numbered 42.

SOUTH CAROLINA.—Total school population in 1871, 209,376. Number attending school in '71, 66,056. The present year shows an increase of 10,266 in the number of pupils taught. The total of 2,185 teachers employed, is an increase of 287 over the previous year. Since the last report 226 new school houses have been erected. The State supplies text-books free, a plan which the Superintendent of Public Instruction disapproves. The State appropriated \$300,000 for the support of schools, but, owing to the bankrupt condition of the exchequer, none of the money could be obtained.

A THEOLOGICAL SEMINARY was opened at Honolulu, Sandwich Islands, October 1, 1872, with four professors.

Schoolmaster—"Of what does the surface of the earth consist?" *Pupil*—"Of land and water." *Schoolmaster*—"Very well. Now, in order that I may see if you clearly understand the subject, I will vary the question a little. What do land and water make?" *Pupil*—"Mud."

CURRENT PUBLICATIONS.

IT is undoubtedly true that when you kill a man you calm him, he probably never was calmer, but one would hardly understand that you had "translated his life unto death," did you say that you had "calmed" him. Such is, however, the synonym for kill, given in a dictionary⁽¹⁾ recently published. So too, hate, has dislike for its equivalent, although a moment's thought shows that there is a wide difference between them. Courtship is given as the synonym for love. Now we affirm that two men may love each other without an idea of courting each other, while on the other hand, if we may credit the stories we hear, there is many a courtship without love. These are errors which a most cursory examination of the book reveals. The author appears to have laid down as a rule that for every word he must have six or eight synonyms and, since our language is not so rich in synonymous words, he has been obliged to connect those which do not belong together. Generally the first two or three synonyms are reliable, but the others frequently express widely different ideas.

Of the companion⁽²⁾ to this book we can speak in more favorable terms. It is small but contains a large list of words, although we fail to find many of every-day occurrence, as cravat, spaniel, turkey, canter, caucus, etc. Magenta is omitted also, but since it is "conspicuous by its absence" in both Webster and Worcester, we cannot find fault with this smaller dictionary for overlooking it. Caucus is a new word, and yet its origin is not clear. A writer in the *Knickerbocker Magazine* gives this account of its derivation. In 1870 a quarrel arose between the British soldiers stationed at Boston and some ropemakers of that city. In one of the conflicts resulting from the trouble several civilians were killed. The caulkers formed a union,

(1) A DICTIONARY OF SYNONYMS OF THE ENGLISH LANGUAGE, with Roots, Definitions, and the Pronunciation of each word. New York: G. P. Putnam & Sons. 1873.

(2) A DICTIONARY OF THE DERIVATIONS OF THE ENGLISH LANGUAGE, in which each word is traced to its Primary Root. Forming a Text-book of Etymology, with Definitions and the Pronunciation of each Word. New York: G. P. Putnam & Sons.

and held meetings to decide as to what course to pursue, and the Tories in derision named them "caulkers" meetings, which was afterwards contracted into caucus.

A work so small as this dictionary must of necessity omit many words, and no two people could agree as to where the line should be drawn; but we are somewhat surprised to notice the absence of so many familiar words, and to see so many uncommon ones mentioned. The derivations are correct so far as we have noticed, but in some instances the information is not full enough to be of practical use. *Ambitio* is given as the source of ambition; but we are not told that the "going about" was used of candidates seeking office, and that hence comes our meaning of the word, a desire for power. So, too, expend is properly derived from *ex* and *pendere*, but no mention is made of the custom of weighing out money. It is true that many already know these little things, but then too, many do not. Like all of Putnam's publications this book is well printed, and has an attractive appearance.

Facts and Fancies, published by the same house, is one of the "goody" book order, being a collection of dull stories, with morals attached. One will give an idea of the book. Cornelia Harden was invited by her cousin to act as bridesmaid, but like Miss Flora McFlimsey, she had "nothing to wear." The bride related the sad circumstance to the groom, and he, with the reckless disregard for expense which possesses young men about to be married, bought a dress for Cornelia. It fitted perfectly, was beautiful, etc., but as Cornelia's mother remarked, it was rather "lightish." That good woman also added, "you are so neat, you will never get a spot on it, I am sure," and Miss Cornelia remarked, "Oh, no!" But alas for poor Cornelia! When they left the train, which they had taken to reach the home of the bride, she found that Mr. John Randall, one of the bridal party, had improved his time in the train by spitting tobacco-juice over her dress, and had ruined it. Moral:—Do not chew tobacco, or if you do, do not spit on people.

The same firm have added eight volumes to their Elementary Science Series.

WE are often told that Adam was the first gardener, but educators should not forget that he was the first philologist as well, and that his first philological exercise—that of naming the animals of Eden and its vicinity, according to their several characteristics—may have grown out of his experience of their ways and antics in the garden. At all events, a garden has been the favorite resort of eminent scholars and literary men from that day to this; though but few of them, it must be confessed, have understood so well as our clerical friend the novelist, chaplain and horticulturist, Rev. E. P. Roe, how to derive both play and profit from a garden.³ Mr. Roe begins his wonderful tale by the astounding statement that in a single year—1871—he received from the sale of fruits and vegetables from his garden of two and a half acres, at Highland Falls, N. Y., over two thousand dollars, besides having ample supplies for himself and family. What is more to the purpose, he tells in a very pleasant, Tristram Shandyish way how he did it; and we gather from the book that it was not by any extraordinary skill or professional tact that he achieved such a wonderful success, but that through manifold blunders, patient and persevering labor in all his leisure hours, and availing himself of all his opportunities for disposing of his products, that he attained to his great success. The book is one which it will do any teacher or professional man good to read; his puns are now and then a little too laborious, but that we attribute to their *earthy* origin—they certainly seem to have cost considerable sweat of the brow; but the work is, in spite of these, eminently readable, and if his counsels are followed would prove, we think, eminently profitable.

“The American Educational Readers,” (IVISON, BLAKEMAN, TAYLOR & CO.) have been compiled by educators whose experience in elementary education ought to qualify them for their work. The series is graded, and while no radical changes are introduced into the usual plan of school reader making, some new features are added which increase the freshness and usefulness of these books. In the first

(3) “Play and Profit in my Garden.” By Rev. E. P. Roe, author of “Barriers Burned Away.” New York: Dodd & Mead.

reader words are connected with the objects they represent in a manner calculated to associate the words and the objects in the mind of the pupil. For example, in the sentence "The cow has a horn," the word "cow" is printed on a picture of that animal. The more advanced books contain reading exercises which impart information of real value to the pupil. The mechanical work is admirably done, the illustrations being the finest we have seen in school books.

"SWINTON'S WORD PRIMER," published by the same house, is intended for pupils who have already gone through some reading primer. The words are grouped according to leading ideas, as "names of playthings," "things we eat," and are divided into monthly and yearly sections. The lessons are short and the words are generally those which children will readily comprehend. Definitions are given and the distinction is taught between words which differ in spelling but not in pronunciation. Words often misspelled as "very," "their," etc., are given especial attention, and there are a few exercises in grammar. These are the main features of this little volume which contains much which is useful.

"Questions of the Day," by J. Hall, D. D., (DODD & MEAD) is a book which will interest a large class of people. The twenty-five lectures which it contains were delivered to the Bible-class conducted by the author, and while the questions are of "to-day" they will be none the less interesting many years hence. They are considered with a fairness which must compel admiration even if we do not always agree with the conclusions reached. This liberal, christian spirit is a delightful change from the acrimony which often characterizes discussions on these subjects. "Ferdinand De Soto," is one of a series of biographies of American Pioneers and Patriots, published by the same house.

KENELM CHILLINGLY and OLD KENSINGTON, published by Harper & Brothers, are two of the most charming novels we have seen in a long time. They have little in common it is true, except that in both there is little adventure and much real life pleasantly described. Kenelm always

was grown up, and at the age of eight, asks his mother if she is not sometimes oppressed by a consciousness of her own identity; while Dorothy, in Old Kensington, is a little girl who develops into a noble woman in the course of the story. The charm of these books consists in this, that they are the histories of a real gentleman and a real lady, using those words in their better sense. It may be this which associates the two in our mind.

The difference between the male and female characters in Kenelm is very marked, the former being strong, and possessing decided peculiarities, while the latter are rather common-place. Cecilia Travers is good-natured, Lady Chillingly a nonentity, and Lily too fairy-like to be classed among mortals. Wit and wisdom are scattered all through the book, and if Kenelm occasionally becomes too pedantic, he manages to say a great many bright things. Parents would do well to ponder Sir Peter's discourse on names. In both of these books the description of real life is very faithful, and, if we may be allowed such an expression, their tone is healthy.

A Strange Story, and A Hand-Book for Travelers in Europe, have lately issued from the Harper's press.



THE *Swiss Times* gives a melancholy statement as to the condition of the poor in the Canton of Berne, which has been compiled from the reports of the Statistical Society and data furnished by sixty local physicians. At the end of last year, out of a total population of 506,475, there were 1,512 idiots and crétins, and 1,292 persons suffering from mental aberration, of whom, by the way, scarcely a third could be received into the asylums. These figures show that in the canton the ratio of idiots and insane to the population is as 1 to 180, while in England the proportion is 1 to 300.

YOU cannot teach a child to take care of himself, unless you will let him try to take care of himself. He will make mistakes; and out of these mistakes comes his wisdom.

THE SCHOOL-ROOM.

Words by DR. W. J. WETMORE.

Music by U. C. BURNAP, Mus. Doc.

Allegretto.

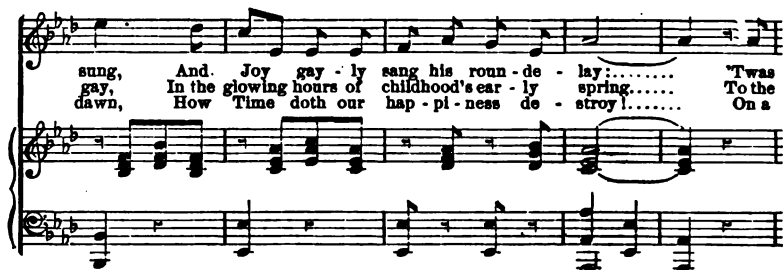


1. In the years that are gone when the mer - ry heart was
 2. Our... friends were very dear, for we met them day by
 3. But the heart is ver - y sad, for.... fad - ed now and

young, And we nev - er dreamed of sor - row or de - cay:.....
 day, Our hearts were as light as swal - lows on the wing;.....
 gone Is youth with its dreams of pleas - ure and of joy;.....

..... Bright Hope, like a bird, of life's bloom - ing pleas - ures
 We wandered to the fields, and we plucked the ro - ses
 Oh! where are the school - mates of child - hood's ear - ly

THE SCHOOL-ROOM.



sung, And Joy gay - ly sang his roun - de - lay..... 'Twas
gay, In the glowing hours of childhood's ear - ly spring..... To the
dawn, How Time doth our hap - pi - ness de - stroy!..... On a



then.... to the school-room we hur - ried on a - pace, Our kind, lov - ing
for - est, too, we roved, then to hear the mer - ry notes Of the Ori - ole high
hill near by the school, look - ing down up - on the plain, Where wil - lows to



mas - ter there to greet;..... For we knew that he wait - ed with
swing - ing on the spray;..... How sweetly to the ear did his
sigh - ing breez - es wave;..... Sleeps the master that we loved - may we



pleasant, smil - ing face, To wel - come us our les - sons to re - peat.
witching mu - sic float, Till the gold - en rays of day - light fled a - way.
all.... meet a - gain, In a school-room bright - er far be - yond the grave.



AMERICAN EDUCATIONAL MONTHLY.

SEPTEMBER, 1873.

ERRORS IN THE USE OF PREPOSITIONS.

II.—OMISSIONS.

THERE is a single use of the preposition *of*, which properly ought to have been noticed in our former article, but which we will now note before proceeding to the errors to which this paper is to be given. It occurs in the sentences, "Nearly all of the passengers were injured;" "He spent all of his time in reading." This use of *of* is not ungrammatical. It is not strictly an error. It is simply an inelegance, one of those little things that characterize a feeble style. For, without the *of*, the expression is not only more elegant but stronger. Compare "All of his life" with "all his life," "All of our efforts" with "all our efforts." When *all* depends upon a pronoun following it, the preposition is necessary: "all of us," "all of them," "all of whom," etc. Yet, even here, it is often preferable to dispense with the preposition, and place *all* after the pronoun. Thus, "Miserable comforters are ye all" is more forcible and elegant than "Miserable comforters are all of you." So, too, "In presence of them all" is better than "In presence of all of them." In fact, the form, "we all," "us all," "they all," etc., will often be found to be much terser and better than the form "all of us," "all of them," etc.; though

both, in a grammatical point of view, are equally correct and proper.

The colloquialism "all of a day," as in the sentence "*All of a day* was spent in the search," of course does not come into the above class, and is not referred to in what has been said.

But we pass on to notice a few omissions. The omission of a preposition is by no means necessarily an error. In very many cases it is both allowable and elegant. But sometimes it is of questionable propriety, while in other instances it is plainly unjustifiable. Of these the following are samples.

1. Where two (or more) partitive terms are used, one of which requires *of* while the other may be used without it. Example: "*Two or three or all* the boys may accompany you." The expression "all the boys" is doubtless stronger than "all of the boys," and, other things being equal, is to be preferred. But such combinations as "two the boys" and "three the boys" will hardly pass as English. Correctness, therefore, requires the insertion of *of* after *all*—"Two or three or all of the boys," etc. Each of the partitive words will then sustain a like and proper grammatical relation to the phrase "of the boys." Another example, similar to this, is the following from a no less forcible writer than Herbert Spencer: "The conspicuousness of *one* or both *the phenomena*."—*First Principles*, p. 129, *Appleton's Ed.* The expression "one the phenomena" is an obvious solecism and really meaningless. The preposition *of* should not, therefore, be omitted after *both*. So in all similar instances.

2. The omission of *of* after a participial noun preceded by *the* or some other definitive term, (as in the sentence, "*The confining them* to this principle has misled them,") is noticed and condemned by grammarians generally. And yet it occurs very frequently, as does also the using of *of* improperly after a participle without any preceding definitive. Thus, "Some were employed in *blowing of* glass, others in *weaving of* linen, others again [in] manufacturing the papyrus."—*Gibbon, Decline and Fall, Chapter X.* We say the using of *of* "improperly;" for there is a similar use of the word that is perfectly proper. No one, for example, would

condemn the following, though no limiting term precedes the participle: "On *hearing of* the accident they started off forthwith;" "He was condemned for *speaking* too freely of their faults;" "They were commended for *giving* freely of their substance to aid the undertaking." An accurate speaker, however, will not confound these cases. Writers are much more likely to be betrayed into saying "*The keeping* great counsels, where made, always goes with the ability to make them."—*N. Y. Times*. And yet correct writers do not naturally form such combinations.

3. A very common and apparently growing impropriety is afforded in the following example: "The line where the main battle was fought was one half to three quarters of a mile in length." It consists in the omission of *from*—in this instance before *one half*. The following afford additional examples: "I could command means enough to purchase *ten to twenty* acres;" "The green corn was *eighteen inches to two feet* high." It is obvious enough whence this error sprang. This, however, does not make it any the less an error, or justify in any measure its use. It may often be readily avoided by substituting *or* for *to*, as in the sentence "After having gone eight *to* [or] ten miles, we discovered our mistake;" or in the following, "The obelisk is a beautiful shaft, rising to perhaps 125 *to* [or] 150 feet." It certainly is more elegant to say "rising to perhaps 125 or 150 feet," than "rising to perhaps from 125 to 150 feet," while the meaning is essentially the same. All sentences, however, cannot well be corrected in this manner. Take, for example, the sentence "Strawberries are selling at \$7 to \$10 a quart." The prices referred to are supposed to vary all the way, more or less, from \$7 to \$10; hence, the true form for the sentence is, "Strawberries are selling at *from* \$7 to \$10 a quart;" *i. e.*, at prices ranging from \$7 to \$10. We should ourselves about as soon think of saying "We went New York to Philadelphia by rail," as of saying "We passed over the road in two to four hours." The one is certainly as correct as the other. Then as to the meaning, if it is nonsense to say "We went New York," it is equally nonsensical, after saying "We passed over the road in two hours," to add "to four hours." The truth is, whether

hours be considered as the object of *in*, modified by the phrase "from two to four," or as understood after *two*, while the words "a period varying," or something similar, be supplied after *in*, the preposition *from* is needed to limit in one direction the extent limited by *to* in the other. Hence, the necessity of saying "We passed over the road *in from* two *to* four hours." The same reasoning holds good in the other and all similar cases.

4. Occasionally a writer is found who drops the preposition *of* from the phrase "of no use," meaning "useless, to no purpose." The following is an example: "It would be *no use* to prove to an army that such and such means were likely to enable them to conquer," etc.—*Eng. Synonyms*, p. 136. This is as bad as saying *in vain* for *vain*.

5. Others, again, improperly omit the preposition *in* before a participle following the word *use*, as in the sentence "There is no use mincing words about it." It should be "no use *in* mincing words," etc. In the EDUCATIONAL MONTHLY for 1868, on page 74, may be found another example: "There's no use sending on the school-master." The error, indeed, is not an uncommon one.

6. A still more common one, however, is the omission of *from* before a participle following the word *prevent*; as in these sentences: "The rims of the wheels are four inches wide, so as to *prevent* them *sinking* into the ground." "Providential circumstances *prevented* his blows *being* effective." "This they were unfortunately *prevented doing*." "We interposed just in time to *prevent* him *carrying* out his design." In all these instances the participle is used without any governing word. The preposition *from* should be introduced before the participle, or else the preceding objective, where there is one, should be changed to the possessive: "Prevent them *from* sinking," or "prevent *their* sinking;" "prevented his blows *from* being effective," or prevented his *blows*, being effective;" "were prevented *from* doing;" "to prevent him *from* carrying out," or "prevent *his* carrying out his design."

7. There is a class of verbs which, when followed by a certain preposition, have one meaning; as, to *be through*; and, when followed by the same word and another prepo-

sition, have still another meaning; as, to *be through with*. To illustrate, take the two sentences, "I am through the book," and "I am through with the book." The former is equivalent to "I have read the book through;" the latter, to "I have no further use for the book." Hence, one may consistently say, "I have been *through* the book, though I am not yet *through with* it." The following is another example: "He *went through* (traversed) the State in three days;" "The proceedings were faithfully *gone through with* (carried out) as pre-arranged." To omit the *with* in the latter cases would rob the words of their conventional meaning, and leave the true meaning of the writer to be inferred. And yet this omission is sometimes made. It was only a few days since that we observed the following instance of this in one of our morning papers: "The formal ceremony of giving possession to the Commissioners of the grounds for the Centennial Exposition was *gone through* yesterday at Philadelphia." The writer meant that the ceremony was performed or attended to, not that it was endured, or sustained, or penetrated, or traversed, or otherwise dealt with. He should, therefore, have used *with* in addition to *through*—"was gone through with." The following sentence affords an example of a correct use of words in this respect: "He feared the Earl of Antrim had not steadiness of mind enough to *go through with* such an undertaking."—*Clarendon*.

8. Before laying down our pen, we would notice an instance generally condemned by grammarians, but we think inconsiderately. In such a sentence as "I dislike the way *that* he acts," or, "Would I had spent in retirement these thirty-three years *that* I have possessed my kingdom," the use of *that* for *in which* or *during which* is undoubtedly to be condemned. There is really nothing in the connection to warrant it. But when the antecedent noun is governed by a preposition (implied if not expressed) which would need to be repeated before *which* if this word were used instead of *that*, (as in the sentence "*In* the day that [*in which*] thou eatest thereof thou shalt surely die,") the use of *that* without the governing preposition seems to us to be both allowable and justifiable. And yet grammarians make

no distinction here. Gould Brown, for example, in his condemnation of this very form, not only does not distinguish it from the other, but makes himself appear ridiculous. He says, "This mongrel construction of the word *that*, were its justification possible, is common enough in our language to be made good English. But it must needs be condemned, because it renders the character of the term ambiguous, and is such a grammatical difficulty as puts the parser at a dead nonplus."—*Gram. of Gram.*, p. 303. What a reason for a scholar to give! Good idiomatic English to be condemned and abjured, because a "parser" is nonplused by it! There need be no ambiguity as to "the character of the term." And as to its "grammatical difficulty," that is more imaginary than real. The relative *that*, as every tyro in English grammar knows, is never preceded by its governing word. This, when a preposition and expressed, always stands at or near the end of the clause; as, "the thousand natural shocks *that* flesh is heir *to*." But the preposition is not always expressed. The foregoing sentence affords an example of this. If expressed, the sentence would read, "In the day *that* thou eatest thereof *in*, thou shalt surely die." This, however, is exceedingly harsh. And yet it can hardly be admitted that the apparent harshness of the wording gave rise to the omission of the preposition. It seems rather to have arisen from the fact of the preposition's being implied in the regimen of the antecedent. The following examples will illustrate this: "*At* the same time that [=at which] men are giving their orders, God is giving his."—*Rollin's Hist.*, ii. 106. "Thou shalt go *to* all that [=to whom] I shall send thee."—*Fer.* i. 7. "You found fault with our victuals [*on*] one day that [=on which] you were here."—*Swift*. "It was only *in* 1835 that [=in which=when] Strauss published his 'Life of Jesus.'"—*N. Am. Review*. "It is *in* the country that [=in which=where] the Englishman gives scope to his natural feelings."—*Irving Sk. B'k*.

"Are appetites and lusts laid down

With the same ease that [=with which] man puts on his gown?"

—*Cowper*.

Indeed, as Brown says, this construction is common enough. And in all such cases, the omission of the prepo-

sition may, not improperly, be considered and called omission by implication, or because of its being implied in the government of the antecedent. Being thoroughly idiomatic in its nature and well authorized, we have no hesitancy in regarding it as perfectly legitimate. If any prefer the stiffer form—"In the day *in which* thou eatest thereof"—we have no controversy with them. Only for ourselves we should, in very many cases, give the other, which is the more natural English form, the preference.

S. W. W.

VENTILATION.

ONE of the pleasantest pictures of the "olden time" is that of the family gathered around the open wood fire. Distance has lent such an enchantment to the view that we long for the days of the open fire place, unmindful of the discomfort of having the back freezing and the face burning at the same time. There is much romantic interest in watching the flames as they assume various shapes; now a castle, now a tree, or a "monster dire" appears, lingers for a moment, and then makes way for other fanciful shapes. There is sociability too in the crackling flames, not perhaps of the loud, talkative kind, but a quiet content, a rumination. We feel as if we would like to be cats that we might express our perfect content by purring. Our fore-fathers have been raised to the highest bravery by an appeal to defend their hearths. But those times are gone. Imagine a general urging on his men by telling them to strike for their registers! Every arm would fall nerveless at the thought of these black holes breathing out heat, as if it were the breath of some monster. We found that we could warm ourselves without letting the greater part of the heat escape up the chimney, so now we have closed our windows and doors by double sashes and weather-strips, and from November to May breathe a vitiated atmosphere.

However pleasant the old-fashioned fire place was, its chief value was as a ventilator to keep the air fresh and pure.

That is one cause of the ruddy good health enjoyed by former generations. Our neglect of ventilation is a marvel of stupidity only to be accounted for by our ignorance of the subject. Air is composed of two gasses, oxygen and nitrogen, in the proportion of 20.81 parts of the former, to 76.99 of the latter. Oxygen nourishes animal life. At each breath we consume $8\frac{1}{2}$ per cent. of it, or more properly speaking we change it, for it combines with the carbon of the blood and issues from the lungs as carbonic acid gas. This is destructive of animal life. So if we determine the amount of air in a closed room, and the quantity we consume at each respiration, we can calculate how long it will be before the oxygen will be exhausted and animal life will cease to exist. Were there no counteracting influences the air would eventually become so impure that we would perish. Although the atmosphere extends for miles above us, and its quantity is so great that we can hardly estimate it, still the constant breathing of animals would finally change the oxygen to carbonic acid gas. This settling first in the hollows would slowly rise up the sides of the mountains, until the highest peak would be covered. But the air which gives us life is not permitted to destroy us. By a beautiful provision of nature the gas, which is poison to us, is life to the vegetable world. Breathing it in with its myriad mouths, it gives it forth again in the form of oxygen. Thus the two worlds, the animal and vegetable, support each other.

Blood is our life, and yet no known substance is more perishable than it. Without constant renewal from the air it perishes. Compared with it the insects, whose ephemeral existence furnishes an illustration of the brevity of life, enjoy a long existence. A description of the lungs would assist us in understanding this part of our subject, but we must content ourselves with saying that they are the common meeting place of the air and the blood. The two sets of vessels are separated by a division so film-like, that it admits the passage of the oxygen to the blood and the carbon of the blood to the air. Should the air force its way into the blood vessels, or the blood into the air vessels, death would ensue. The pulsations of the heart drive the blood

to the lungs, while the air is forced down to meet it. If the air be pure the blood bounds back through the veins, bearing vigor in its current, but if the air be impure its flow is languid, and it carries disease and death with it. The action which takes place is precisely that which occurs in a fire. In fact every animal is on fire, the tissues being burned and renewed until, after a time, the whole body has been renovated.

We understand the necessity of supplying air to our fires, but there is greater need of furnishing it to those internal fires which, once extinguished, can never be re-lighted. It is strange that we do not obtain an adequate supply of fresh air when it is all about us, and to be had almost for the wishing. Day and night, in winter and summer, there should be some place through which the fresh air can come into our dwellings.

Nowhere is the want of ventilation more felt than in the school-room. Every teacher knows how sometimes the pupils seem possessed by the demons of stupidity and inattention. They are drowsy, and appear absolutely unable to comprehend the most simple explanation. The reason is that the air has been breathed so long that it has lost much of its vitalizing power. In summer the windows of the school-room should be open all the time, unless adequate ventilation be otherwise provided. In winter the room should be aired once an hour. For this purpose a recess of ten minutes may be given, and we think more will be accomplished in the remaining fifty minutes than in the sixty, if no fresh air be admitted. "What," some may exclaim, "let all the heat out and the cold in?" Yes, let the heat out. It will do no harm, for the internal fires will burn the brighter because of the fresh air.

But there is another reason for these hourly recesses. An hour at one mental occupation is enough. At the end of that time the mind needs rest or change. Try to study hard for that length of time and see how tired you will be at the end of it. It is trying for a grown person, but for a child it is well-nigh insupportable. The fear of punishment may have a restraining effect for a time, but at last nature will rebel and the tired faculties will seek relaxation in some sort

of mischief. A teacher has not only a present powerful influence but a prospective one as well. A few simple laws of health explained and enforced during school days will vastly benefit the rising generation.

In every school there are some who linger over their books when recess is announced ; they are the " best scholars." Pale and narrow chested, they are the teachers' delight, and the pride of their parents. Applause awaits them as at examinations they parse, " Let there be light," or triumphantly tell the number of inhabitants in Timbuctoo. True, they have a great deal of knowledge which will be beneficial if they know how to use it, but they enter life with shattered health, a burden to themselves and to others. All such pupils it is the teacher's religious duty to drive out into the fresh air. Knowledge is valuable but not so much so as health. This remedy of fresh air is very simple and easy to procure, too simple perhaps to gain much attention, but it will prove very efficacious and will richly reward a trial.

LITTLE BOSTON.

JUST opposite my window is a Kindergarten, and I derive much amusement and satisfaction from watching the children at their play.

The little world is very like the great one outside, and these small citizens enact many of the scenes that are taking place in the city that lies beyond their garden walls. So capitally do they play their parts that one can easily guess what is going on, and needs no play-bill to give the *dramatis personæ*.

The yard is divided by a wide flight of steps and a low wall ; the boys play in the upper part, the girls in the lower, the steps being the boundary ; a sort of society platform, beyond which neither may pass, but where both sides may meet when so minded.

Up in the paved yard the little lads mimic their fathers in many ways, and unconsciously set their elders a good

example in some things. I observe that any attempt at cheating in the traffic of marbles, string, knives or apples, that goes on so briskly at times, is at once exposed and punished. Honesty is so plainly the best policy, that these young business men promptly excommunicate swindlers, no matter if they wear velvet knickerbockers, and live in swell-front houses.

I also observed that during the election these small politicians, though much interested, neither bribed, threatened nor fought their opponents, but amicably discussed the merits of the rival candidates, with a good deal of "My father says," and "My father thinks," to add weight to their arguments.

They marched and countermarched with paper lanterns, minus all light except the sunshine of their own bright faces; they unfurled remarkable banners to the breeze, and when one side cheered heartily for "Horace Dreeley," the other side blithely responded with "Free 'rahs for Drant!" And often, in the enthusiasm of the moment, both parties cheered everybody promiscuously.

It gave me satisfaction to observe that none of these little gentlemen descended to unjust or ungenerous criticism, unmanly abuse, or coarse caricature of the future President, which-ever man might win that uncomfortable honor.

The very worst they did in the heat of that exciting time was to have an old hat on a pole, and put little sticks in their mouths for cigars. It was so funny to see how quickly these small men caught up the watchwords of their elders and imitated their jokes, that I wished both candidates would set young America better examples in costume and habits. To me one very pleasing feature in this late election was the fact that many small women voted. They did not demand the ballot with loud protests, denunciations or appeals; they did not even ask for it; but several bright-eyed little ladies sat on the upper step, watching the fun with such interest, as they tore up an old copy-book to make votes of, and offering such wise and witty suggestions that it seemed to occur to the gentlemen that it would be but just, to say nothing of civility and gratitude, to ask these helpful friends to take part in the duties of the day.

"Ho, girls don't vote!" cried one little foggy in a plaid suit, that made him look like an animated checkerboard.

"Well, I don't see why they can't. Mamie gave us her copy-book, and Nelly lent us all her pencils to write the names. 'Tisn't fair not to let 'em vote if they want to. Do you?" asked a rosy-faced gentleman, with bright buttons sowed broadcast over his blue jacket.

"I like to play what you play, Willy," answered Mamie, looking up at him with such a confiding air that Bright-Buttons decided the matter at once by handing her a bit of paper, with the friendly explanation:

"If you vote for Greeley, put H. G. on that, and if you go for Grant, put U. G."

"What shall you put on yours?" asked grateful Mamie, with the amiable weakness of her sex.

"Shan't tell. You've got to do it all yourself;" and away went Buttons to put more votes into several chubby hands mutely outstretched to receive them.

"I say, Nelly, how do you spell 'Lysses Grant? L. G., isn't it?" asked the plaid gentleman, forgetting his prejudices as soon as the point was carried, and condescending to ask help of the weaker vessel, who gladly gave it, without a word about past wrongs.

"You can't come into our yard, and we can't go into yours, so we'll pass a hat round, and you can put your votes in all nice, don't you see?"

And Buttons gallantly spared the ladies the unforgivable sin of quitting their sphere to go to the polls, by handing round his sailor hat, into which they carefully laid the crumpled papers, with tipsy-looking letters scrawled on them.

'Lysses Grant was elected, with such cheering, firing of pop-guns, and throwing up of hats, that the cats flew off the sheds in all directions. Then the entire population took hold of hands and danced round, singing a song not included in the campaign melodies, being a lively mixture of "Ring around a rosy," "Capt. Jinks," and "Yankee Doodle."

A general game of tag followed, in which all party feeling was forgotten; and when a bell rang, the citizens returned to their duties none the poorer or the worse for the election.

Shutting my window, I went back to my own affairs much impressed by this quiet settlement of the vexed suffrage question, wondering how long the older women would sit at the top of the steps helping their friends while waiting to be asked to share the pleasures as well as the penalties of equal liberty ; and I accepted the child's play as a good omen that the hat would soon be passed to them by some just and generous brother, who believes that they have heads as well as hearts.

The late fire was all reënacted for my benefit on the little stage opposite. Alarm-bells rang, firemen, with caps hind part before, and jackets wrong side out, "ran with the machine" as briskly as the brave neighbors who dragged the larger engine twelve miles to help extinguish the real fire.

Ropes were thrown over the fence, and a great swarming up and down the walls followed, with shouts, and cheers, and an occasional smash of the old box, which represented the valuable stock of all the great firms that suffered.

There was no drunkenness, no thieving, and but very few arrests, during this terrible conflagration, which spoke well for the order of the city.

When the first excitement was over these curly-headed city fathers met on the wall, and, after much discussion, set up a post-office in the big box, which seems to work smoothly, if one may judge from the rapid delivery of letters and papers in all parts of the yard.

The ladies did their part nobly ; first, in saving dolls of all sorts from a fiery death, then in nursing the sufferers, who lay in shawl beds on the steps, and running round with bundles of relief, like distracted ants on an ant-hill.

The boys make the most noise, I observe, but stick to the old games and do things according to rule. The girls play more quietly, but their inventive faculties are marvelous, and I am often puzzled by the new plays they get up.

Of course they imitate their mammas, gossip, "dress up," pay calls, have tea-parties, and attend to their children. But even in their mimicry they improve upon the examples set them, in a way that mammas would do well to follow.

They take a great deal of exercise, which appears to have

an excellent effect upon their nerves; they do not leave their children to the care of servants, and their housekeeping is of the simplest description.

If all the young ladies in Boston would dance the German in the morning, as these damsels do, take a good run round the Common, and dress as sensibly as my small neighbors dress, they would keep their youth and beauty longer, and what is better than either, their health.

These little mothers walk with their children, feed, teach and wait upon them with a devotion beautiful to see, and I am sure that this generation of dolls will be the better for it.

It is delightful to find that in this circle clothes do not make the woman, for the little girl in a faded sack, with copper-toed boots and a shabby hat, is the queen of society, because she is the brightest, honestest and sweetest-tempered.

They call her Hatty, and she leads them all, even the dainty Lilys and Mauds, in their embroidered cambrics, gay sashes and fashionable hats with half a milliner's stock on the top.

Sometimes she keeps school for them, and then the dullest goes to the bottom of the class, no matter how splendid she may be. If any one is rude or cross, Hatty leads her to a dim retreat under the steps, and leaves her to reflect upon her sins for a time. But very soon she goes and peeps in, smiling sweetly as she beckons the small sinner out, kisses and restores her to society again without reproach or scorn.

If any one is hurt in either yard, Hatty runs to comfort the sufferer; even the noble beings up aloft call her to bind up their hurts with her microscopic handkerchief, to wipe away their tears, and send the wounded heroes back to the fray with a consoling pat and a cheering nod.

I am fond of this stout-hearted, tender-handed Hatty, and fancy she will make her own way in the world by the magic of courage, cheerfulness and good-will. Her strong-mindedness seems to be of the right sort, womanly and winning, with good sense and tact at the bottom. I wish her all success, and trust that the little feet in the copper-toed boots will not find the road before them very hard to travel.

One of the favorite games among these ladies is "honey-pots," and I never see them playing it without wishing that

we elders did the same, metaphorically speaking. I discover that whenever other games lose their charms, when squabbles seem imminent, or spirits begin to flag, some wise little soul calls out, "Let's play honey-pots!" and at it they go, swinging and lugging one lively pot after the other till all are bubbling over with fun.

Why don't we find something that can do for us what this childish game does for these small women, and for a time, at least, endeavor to forget our nerves, our cares and our vanities, in trying to see which can be the strongest and the sweetest?

Of course there is love-making in Little Boston, and very pretty love-making it is, too, without falsehood or manoeuvring, very little coquetry, and I trust no worldly-mindedness. Simple and sincere are the loves of my young Romeos and Juliets, and very tender are the trysts they keep on the red steps or at the creaking gate.

Bright-Buttons fondly adores a small charmer in a red hood, and often leans pensively on the wall watching her play below. At times his passion moves him to break all bounds; he slides down the baluster, gives his darling a bite of his apple, a suck of his orange, or the larger half of his candy, and then tears back again to play leap-frog with redoubled relish.

Little Red-hood returns these favors with smiles, throws him kisses, tosses back his ball when it comes over the wall, and lets him play with her bright hair when they trot home from school together.

Another pair, like Pyramus and Thisbe, talk not through a chink, but round a post, and no lion molests them. On one occasion, though, a small "rough" hustled little Thisbe so that she fell down a step or two and was picked up with great lamentation by her mates. He never did the base deed again, for Pyramus fell upon him as he retired, and so pummeled him that he roared for mercy, when the wrathful lover cast the ruffian's cap into the street with direful threats for the future, while all the other gentlemen applauded wildly.

On the whole, the little loves seem to run smoothly, and no one cares who is richest, who has the most grandmothers, or whose father is in the genteelest business.

An Arcadian state of things that even the most sanguine believer in the millennium can hardly hope to see established; but it is very pretty to watch, and it keeps one's faith fresh in the old-fashioned idea that love makes all equal if it only be strong and pure enough.

A bell rung by some invisible hand daily calls the little people from play to study, and trooping in, they leave the garden empty. But presently the sound of many childish voices ringing sweetly makes music for the street, and passers by pause a minute to listen, then go on with a smile and a tender thought for the small singers.

As I shut my window I end the little sermon I have been preaching to myself by wondering if big Boston, the city of my love and pride, will ever be like the Kindergarten over the way. A little world full of busy, happy souls, helping and loving one another, obeying promptly the call of an unseen teacher when summoned from their pleasures to their duties, and making cheerful music of their lives till it shall be heard above the turmoil of the world, singing such brave, sweet songs, that strangers passing by shall stop to listen, and go on with a grateful smile, the better for the lesson unconsciously bestowed.—*Louisa M. Alcott, in Youth's Companion.*

COST OF EDUCATION.—The average amount of the necessary expenses for the year, at Oxford, for what is called an unattached student, is about \$236; and the results "prove that a careful student can get through his Oxford career for £50 a year"—about \$250. The amount of intellectual life and industry developed by the unattached system compares favorably with that common among the average members of a college. \$250 a year would be considered by most boys at American colleges as a small allowance for a year's expenses. In round numbers, and including only the necessities of life, such as board, washing and tuition, the total cost of living at American colleges ranges from \$200 to \$400. These figures will cover only necessary expenses. Traveling expenses, clothes, and the cost of personal indulgences, cannot be estimated.

VASSAR COLLEGE.

SOME time since the United States Commissioner of Education requested President Raymond to furnish, for transmission to the Vienna Exposition, "a statement of the aims and resources, the plan of organization and methods of instruction, of Vassar College." Dr. Raymond's reply, which has just been issued in pamphlet form, contains much of interest on the subject of female education. Vassar is well enough known to need little historical notice. The grounds, buildings, and furniture, were given by Matthew Vassar of Poughkeepsie, who also bequeathed large sums for the establishment of several "Funds," one of which is designed to assist needy pupils. His gifts aggregated \$778,000. Other donations have been made by wealthy gentlemen. There was no lack of money, but although the buildings and apparatus were all supplied, the system of education had yet to be determined. Not only was there no precedent to refer to, for no female institution had before contemplated so thorough and complete a course of instruction, but little could be learned by studying the regular college curriculum. That curriculum was itself in an unsettled state, owing to the demands of science for greater recognition. A great clamor was raised to introduce "practical studies" into the course, and to pay less attention to the classics. But even had the college course been generally accepted as the best for boys, it would by no means be certain that it would meet the wants of girls. The domestic element demanded a large consideration in a female college. The pupils should, as far as possible, be assured the comforts and restraints of a home. Then, too, the claims of æsthetic culture must receive a larger share of attention than in a boys' college, for it was resolved, "that whatever might be added to former ideals of womanly culture on the score of breadth and thoroughness, there must be no lowering in the standard of womanly refinement and grace;" hence music, drawing, and painting, must be added to studies strictly disciplinary. It was therefore wisely resolved to adopt a provisional plan, until experience

should have pointed out the best course to pursue. "The only prerequisites to admission were, that the candidates should be over fifteen years of age, and should be prepared for examination in arithmetic, English grammar, modern geography, and American history." Three hundred and fifty pupils were admitted the first year, but their examinations showed a great want of disciplinary preparation. They had little idea of the "real elements and processes of a higher education, and of the subjective conditions of mental growth and training." Dr. Raymond says: "The deepest impression made by these preliminary examinations on those who conducted them was this, that the grand desideratum for the higher education of women was *regulation*, authoritative and peremptory. Granting that the college system for young men, coming down from an age of narrow prescription and rigid uniformity, needed expansion, relaxation, a wider variety of studies and freer scope for individual choice, there was evidently no such call in a college for women. In the field of '*female education*,' without endowments, without universities or other institutions of recognized authority, without a history or even a generally accepted theory, there was really no established *system* at all; and a system was, of all things, the thing most urgently demanded. That it should be a perfect system was less important than that it should be definite and fixed, based upon intelligent and well-considered principles, and adhered to irrespective of the taste and fancies and crude speculations of the students or their friends. The young women who, all over the land, were urging so importunate a claim for thorough intellectual culture, should first of all be taught what are the unalterable conditions of a thorough culture, alike for women and for men, and should be held to those conditions, just as young men are held, whether they 'liked' the discipline or not. The rising interest in the subject of woman's education, which so signally marked the recent progress of public sentiment, required a channel through which it might be directed to positive results. If Vassar College had a mission, was it not, clearly, to contribute something to that consummation? To adopt the 'University System,' or any other based on the purely

optional principle, was manifestly to throw away the opportunity, and to use whatever of power and influence the College might have derived from the munificence of its founder to perpetuate the deplorable state of things which it had been his chief desire to assist in changing."

In the middle of the second year an attempt was made to arrange the pupils in classes, but not until the end of the third year was this sufficiently accomplished to place Vassar in the rank of regular colleges. The present plan of study is the one which experience has approved. Until the middle of the second year the course of study is invariable, but after that it is partially elective. We say "partially elective," for the student is compelled to select a certain number of disciplinary studies, and the number of all branches which may be pursued at one time is limited to three, which have not been previously studied, and one art-study. The aim of Vassar is to develop girls mentally, morally, and physically, and it has pursued these objects with a large degree of success. It is accomplishing, however, a better end than the education of the few hundred students which attend there, for it is demonstrating the advantage to women of studying the highest branches, and by its experience it is acting as a guide to other female institutions, and raising their standards. It answers the clamor of many women for admission to boys' colleges. Not to mention more serious objections to mixed colleges, it would create confusion in the curriculum because of the necessity for the introduction of studies demanded by women; studies necessary not because women are not mentally capable of pursuing any branch which man can, but because they have use for different kinds of knowledge. So distinct would the two courses be that, in effect, there would be two institutions under one roof, unless indeed the professor of worsted dogs were to be incorporated among the regular faculty. Women need a thorough education and Vassar furnishes it, not only to its own students, but its experience will make many more such institutions possible. Its success under the difficulties it has encountered is most gratifying to the friends of female education.

THE SCHOOLMASTER ABROAD.

A TRIP to Europe has been the dream of many a teacher whose scanty income seemed to preclude the possibility of such a pleasure. But thanks to the reduced rates offered by a firm, who make it their business to organize such excursions, some have been able to go. On the 21st of June about 150 schoolmasters and schoolma'ams, professors of out of the way colleges and reverends, whom necessity compelled to teach as well as to preach, started on one of the Anchor line steamers. Their progress is necessarily rapid as many of them must return in time for the opening of the school year, and they have a great deal to see. Some will go as far as Rome, and some will not return with the party, but will travel or study for a time in Europe.

The *Edinburgh Courant* devotes nearly three columns to the party. The Lord Provost welcomed them to the city, at a meeting held the evening of their arrival. He said he could "not sufficiently congratulate the citizens on the arrival in Scotland of that distinguished party which had come from the United States, a party of American cousins, who were objects of peculiar interest, and whom at the same time they met with love as their sons and daughters, as coming from themselves." The speech was full of friendly sentiment, and his lordship concluded by offering the deputation, in the name of the citizens, a cordial welcome, and thanked them heartily for the honor of such a visit.

On Sunday the Rev. Dr. McGregor, who noticed many of the teachers in his congregation, said: "I cannot allow this service to close without saying to those from America, not only in the name of the clergy, but of our fellow-citizens, how heartily we welcome you to the ancient capital of Scotland. I trust you will carry with you many happy memories of your visit to this city and country, and the other lands in which you propose to travel before returning home. Such visits can hardly fail to be of advantage and mutual good, cementing the tie which binds us so firmly together, and which we hope, with God's blessing, will remain unbroken for many generations. Regarding you as the repre-

sentatives of one of the most blessed and sacred interests on the continent of America, regarding you as the representatives of American education, I may be allowed, in one word, to say how much we feel the hope of your great country is the hope of our own, that it does not lie in your vast material resources, nor in your national energy, nor in your commercial prosperity or enterprise, but in the sound education of your people, and in pure and undefiled religion, more and more prevailing throughout all your vast territory. We feel more and more that the salt which keeps the breath of society sweet, the salt that preserves a nation from moral corruption, is its righteous, God-fearing men and women. It is because we know that there is in the heart of the great American people true love to their Lord, loyalty to the Master, and fear of God, it is in consideration of that above all other causes, that we look forward to a great future for your nation, and a future of usefulness on its part to the world."

After leaving Edinburgh the tourists visited several other cities, and finally arrived at Derby, where they received a flattering public ovation. At the banquet in the evening toasts and music were agreeably intermingled. Mrs. Nelson, a teacher from Texas, asserted the right of women to speak in public, and drew a vivid picture of the discouragements and trials of teaching among the freedmen of the Southern States. The Earl of Shrewsbury and Talbot entertained the party for a day at Alton Towers, and altogether the educational tour bids fair to be a grand success. Paris, Vienna, the Rhine, Switzerland and Belgium are to be visited before the return home, which we believe is fixed for Aug. 31st.

THE entire cost of the Lenox Library building will be between four and five hundred thousand dollars, wholly independent of the value of the lots upon which it is erected. It will thus be seen that Mr. Lenox's contribution to the city of New York is one which will stand almost alone in munificence.

ANAESTHASIA.

SOME twelve years ago the discovery of anaesthesia was very fully discussed, in order to decide to whom belonged the honor of demonstrating the fact, that the human system can safely be reduced to a condition in which it becomes unconscious of the sufferings of disease, or the pains of surgical operations. The question has been revived, although we have seen no new arguments adduced.

Strictly speaking, neither Dr. Wells nor Dr. Morton can claim to be the discoverer of anaesthesia. It was known in the times of Herodotus that the vapor of burning hemp produced excitement and insensibility to pain. Thus speaking of the Massagetæ he says: "They have discovered other trees which produce fruit of a peculiar kind, which the inhabitants, when they meet together in companies, and have lit a fire, throw on the fire as they sit around in a circle, and by inhaling the fumes of the burning fruit which has been thrown on, they become intoxicated by the odor, just as the Greeks do by wine, and the more fruit is thrown on the more intoxicated they become, until they rise up to dance and betake themselves to singing." Homer mentions the effect upon Ulysses and his companions of drinking nepenthe, which was probably a decoction of hemp. A Chinese physician, Hoa-tho, who flourished some 1,500 years ago, was also familiar with some anaesthetizing agent.

Sir Humphrey Davy used nitrous oxide gas, and describes its effect upon him. He adds: "As nitrous oxide in its extensive operation appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." Thus the honor of discovering anaesthesia cannot be said to belong either to Dr. Wells or to Dr. Morton. The question is, who developed it sufficiently to make it of practical use in surgery? In 1844 Dr. Colton was traveling in New England with his famous exhibition of nitrous oxide, or laughing gas. Wells witnessed its effects, and conceived the idea that it might be employed as an anaesthetic. At his request Dr. Colton administered it to him,

and while under its effects he had a tooth extracted, without any feeling of pain. Elated with his discovery, he went to Boston to lay it before the medical faculty, but the one experiment which was allowed him failed, and he was pronounced a humbug. He returned home in disgust, but after a time came to New York.

In the meantime, Dr. Morton had been experimenting in New York, and was successfully using sulphuric ether. Thus Dr. Wells found his discovery superseded, and his claims denied. This so worked upon his mind, that in 1848 he killed himself. From the evidence we have, it would appear that while Dr. Wells demonstrated the possibility of using an anaesthetic, Dr. Morton developed the idea, and made its employment practicable. To both is due the warmest praise and gratitude, for few discoveries have added more to our comfort.



THE BEARING OF THE KINDERGARTEN.

DR. SAMUEL OSGOOD is constantly using his abundant leisure, his keen observation and his ready pen, to some purpose. We hope that he may frequently bring his pen to move on the "Educational Question." In Harpers' Easy Chair for August he discusses the Kindergarten :

Switzerland has led off in the true culture of the faculties through Pestalozzi ; and Germany, through Fröbel, has developed the scientific method of Pestalozzi in his effective and winning educational art. The Kindergarten is a great fact and a far greater promise. It is a sign of the new education that is to train our boys and girls for the science and the art of common life. It means to restore the old paradise and to keep the devil out. Look in upon that company of twenty or thirty boys and girls who are under the guidance of an accomplished pupil of Fröbel with her assistants. You find them at their lunch around two tables, and laughing and talking as merrily as birds hop and chatter. Glance at the spacious and airy rooms, and you see little that looks

like keeping school. There are flowers and pictures and birds, and everything pleasant and enlivening. Examine the cabinet of apparatus and the specimens of work. You find no books, but here are geometric blocks of many kinds, paper and sticks for various tasks of the ready fingers and the restless fancy. Here are balls of all sizes for study and play, and the whole aim evidently is to lead the child to see nature and life for himself, and learn to know real objects instead of mere words.

Now lunch is over, and a basket is brought in which holds what looks like a lump of ice covered with cloth. The cloth is taken off, and there is a large piece of clay for modeling. Squares of board are distributed to the scholars, and the clay is divided among them in due proportion, with modeling sticks of the simplest form. The teacher asks of the scholars, in turn, what they propose making, and they reply at once. One says, "I will make a plate;" another, "a basket;" another, "a house;" another, "a snake;" another, "some fowls;" another, "a bird's nest;" another, "a basket of flowers;" another, "a cake," and so on to the last scholar. To work merrily they go, breaking out now and then in a cheery song, until, with quite different degrees of success, their work is done. The bird's nest and the basket of flowers and a few other things are quite pretty, while the house and the hens may need some help from imagination to interpret their construction. But all are wide awake, and senses and fingers and thought and fancy are all astir. It is substantial education, and the foundation of wholesome labor and artistic training. This is an exercise that comes only once a week. This over, it is time to rise from the work-bench and go to the more open room for more stirring movements, and for plays, with motions and songs that represent the farm, or garden, or workshop, and carry joy and good-will into every gesture and tone. Soon school is done, for it lasts only three hours, and the merry, rosy girls and boys come to you, as they go out, and take your hand and give you a graceful courtesy or bow that is worth more than any stately etiquette of courts.

This is a glance at the Kindergarten on Fröbel's plan, and it is evidently a method of training that allows of the utmost

variety of adaptation, and invites both loving enterprise and artistic originality without limits. If Fröbel had, as some say, more ingenuity and vivacity than inspiration and depth, and if too much of his song is doggerel, and his views smack too much of materialism, these failings do not belong to the principle, but to the man, and he has started a movement which is likely wholly to revolutionize the education of children, and to tell strongly upon all ages of study. Our young people must see things as they are, and learn to observe, compare, judge, and act for themselves, or they will be a set of imbecile pedants in a world that is now calling them to have their eyes open and their hands ready, or go to the wall. If the true method is carried out, there is no danger of losing either high inspiration or solid utility. If we open our senses to nature and life, and stir ourselves bravely in all needed play and exercise, the intuitive and spontaneous faculties of the reason and will are sure to report themselves, and good healthy affections will give heart and glee to our movement. So, too, the best working training comes, and health and intelligence and good-will that start from right principles go forward bravely to their life-work. All this we need, for never before were men called upon to judge and act upon such great principles and interests as now, and civil justice and social science are submitted to our judgment and vote.

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THE opinion has been frequently expressed of late that the English tongue is fast becoming the language of the world. In Siam, the king has established two English schools for the education of the sons of his nobles. These future Asiatic aristocrats are to be able to converse with, and to be able to read the literature of, the people of England and the United States. French may remain the language of courts, but the commercial tongue of the world is undoubtedly English, and the knowledge of it is spreading with every fresh port in Asia and Africa opened to commerce. Japan has adopted it as the official language.

NATIONAL EDUCATIONAL ASSOCIATION.

THE National Educational Association was convened at Elmira, Aug. 5th. The opening exercises were very brief, consisting of a prayer by Rev. Dr. George of Elmira, and several motions referring to the appointment of committees. Mayor Caldwell, and Mr. Diven, President of the Elmira Board of Education, delivered addresses of welcome, which were responded to by Mr. B. G. Northrop, President of the Association.

The first question discussed was: "Ought the Chinese and Japanese indemnities to be refunded unconditionally, or devoted to specific educational purposes?" The President rose, with most commendable fairness, to explain that, for the present, he had abandoned his intention of going to Japan, as Minister of Education—hence his utterances on this occasion should not be taken as "official." This was highly appreciated by all who understood the merits of the Mori-Northrop-Japan affair. Hon. Edward Shippen, of Philadelphia, gave a short history of the fund, which he declared was extortionate in amount, and, after noticing the great interest in education among the Japanese, urged the unconditional return of the money, being certain that it would be used for educational purposes only. President Northrop and Dr. McCosh spoke on the question, the latter urging the imposition of such conditions as would prevent it from being diverted from its intended purpose. After remarks by several others, the matter was referred to a special committee.

The afternoon meetings were devoted to the discussion of questions by the various departments into which the association is divided. The Normal Department discussed the question of "The duties and dangers of normal schools," which was opened by Richard Edwards, President of Illinois Normal University, and "To what extent and in what way ought a normal school to conform its plans to the wants of the region in which it is located?"

Before the department of Elementary Instruction there were delivered two papers on elementary reading, and

before the department of Superintendents, A. J. Rickoff, Superintendent of Schools in Cleveland, Ohio, read a paper "School-house Plans." Perhaps the most interesting paper of the afternoon was that upon a National University, read before the department of Higher Instruction by President Eliot, of Harvard. He first told how little had been thus far done with reference to this subject by the association, and then, examining the legislation upon the subject, declared it to be loose, crude, undignified, and unworthy of the subject. He closed by saying that in his opinion, a national university was inconsistent with the spirit of American institutions. The paper was most suggestive, and the debate which followed was warm. The general opinion seemed to tend to the idea that a national university, under the charge of the General Government, was not desirable.

At the opening of the evening session Dr. Reid, of the University of Virginia, delivered an obituary address, eulogistic of Dr. Wm. H. McGuffey. The Chairman then introduced Dr. McCosh, who was to speak on "Upper Schools." He began by declaring that the American school system, while very good in some particulars, was deficient in others. It lacked an organized system of superintendence and inspection by highly-cultivated men, well paid and ready to examine any school, at any time. Speaking of American colleges, which in his opinion impart as high and useful an education to the general mass of students as the Universities of Oxford, Cambridge, or Berlin, he said they failed only in cultivating a few special and very far advanced students. If this were remedied by raising the standard of admission, and offering encouragements to original research by graduate fellowships, American universities would combine with their own excellencies those of foreign institutions. But our universities cannot raise the standard of admission because of the lack of upper schools, and the low grade of those which exist. For the sake of comparison, he then gave a review of the classical gymnasia, and mathematical and scientific schools of Germany; of the endowed schools of England, and of other European countries. Then turning to American schools,

of which he affirmed there were not enough, he discussed the way in which the ninety millions' worth of unappropriated public lands, or a part of them, ought to be applied to educational purposes, so as to do most good. He thought it should not be given to agricultural schools, but should be applied in the Northern, Middle and Western States to the cause of higher education, and in the Southern States, under certain conditions, for the support of primary and higher schools.

The programme announced for the second day was a continuation of the debate on Dr. McCosh's paper on "Upper Schools," and the consideration of two other questions, but Dr. McCosh attacked the land grants to Agricultural Colleges in such a trenchant manner, and threw out so many suggestions, that the entire morning session was devoted to the consideration of that one subject. The points made by the speaker were that the endowment was partially distributed, that the schools when endowed do not do much good, and that they are not after all really agricultural colleges. He advocated using public lands to establish upper schools, which should act as feeders to the colleges. The debate was closed by referring the question to a committee, who are to report at the next session of the association.

The afternoon session was occupied by the four departments separately. Before that of Normal Schools Miss Lathrop, Principal of the Training Schools at Cincinnati, read an essay upon the place of training schools in normal school work. Before the same department, Mr. Dickinson, Principal of the Massachusetts Normal School, at Westfield, read a paper upon elementary and scientific knowledge. The Department of Superintendence held no session. Before the Department of Elementary Schools, two papers were read. One was by Mr. McVicar, Principal of the New York Normal School at Pottsdam, on the principles and methods of illustrating in arithmetic. The second discussed the question, "How may the elementary school instruction be made more useful to the future citizen?" This was by Mr. Harrington, Superintendent of Schools, New Bedford, Mass.

The most interesting afternoon session of the second day, was that of the Department of Higher Instruction, before which Prof. Joynes, of Washington and Lee University, Virginia, read an exceedingly interesting and able paper upon the study of the classics. The discussion which followed was interesting, because of the vigorous attack which was made upon the study of the classical languages. President Eliot was asked to state his opinion as to whether the study of Greek or German afforded superior advantages to the student. He said that the study of Greek was better, because that was the more perfectly inflected language, and because of the beauty of its literature; but it was so slightly superior, that the practical advantages to be derived from the study of German would turn the scales in its favor, especially wherever only one of the two languages could be studied. Prof. Mears, of Hamilton, was a most earnest supporter of the necessity of Latin and Greek to a liberal education.

At the evening session of the General Association, the paper of Richard Edwards, President of the Illinois Normal University, upon the question, "How much culture shall be imparted in our free schools?" was read by Mr. Carleton, Mr. Edwards being too ill to be present. He took an advanced view of the subject, and recommended imparting a very high culture. Mr. Wickersham, Superintendent of schools of Pennsylvania, who opened the discussion, differed only slightly from this opinion. All the culture practical should be afforded, and the limit would be found in public opinion, and the wealth of the community. Then alluding, by implication, to President Eliot's contrary opinion, he said that in his view the Government was as much warranted in supplying high as elementary instruction. After a short speech by Prof. Atkinson, Prof. Atherton, of Rutgers College, New Brunswick, N. J., read a long and carefully prepared paper upon the relation of the General Government to Education. He favored the fostering of both higher and elementary education by the Government, and the use for this purpose of the public lands under stringent conditions. That portion of the paper which was devoted to a review of what the Government has already done for the

promotion of higher education, presented a careful statement of the present condition and resources of the so-called Agricultural Colleges. This exhibit was a surprise even to the friends of those institutions, and was accepted by the Association as a complete refutation of the ill-advised attack upon them.

The morning session of the third day was largely occupied by a discussion of Prof. Atherton's able paper, read the previous evening. Mr. Newell, of Maryland, defended the school system of his State from some criticisms made upon it by Prof. Atherton. He thought that, instead of being "a sort of a system," it was not equalled by that of any other State, and he defended his opinion by an analysis of the law on the subject. Dr. Van Bokkelen, formerly of Maryland, spoke to the same effect, and added a wish that the education afforded in our public schools might be of the highest grades.

Mr. Hancock, of Ohio, approved of education by the Government, because he knew of no nation whose people had been thoroughly taught by private enterprise. He then offered a resolution to the effect that the funds derived from the sale of public lands ought to be devoted to educational purposes. The resolution was referred to the Committee on Resolutions, after which Prof. Atkinson, of the Boston Institute of Technology, said he approved of the resolution, but in his opinion the system of Government schools ought never to supersede the present. Mr. Brown, of Louisiana, then spoke of education in the South. He was followed by Prof. Atherton, who answered the objections which had been made to his paper on the "Relation of the General Government to Education."

Dr. McCosh then made another attack on the Agricultural Colleges. This subject is one which, by its connection with other questions, very frequently came before the convention. The debates upon it were the warmest of the session, and called forth the ablest speeches and most abundant applause. Mr. Gibbs was the next speaker, his subject being "Education in the Southern States." He was formerly Secretary of State in Florida, is now the Superintendent of its schools, and is the first negro ever appointed to

such a position. His paper was long, ably prepared, and greeted with much applause. He was followed in the discussion by President Fairchild, of Berea College, Kentucky.

Ex-Gov. Seymour, of New York, delivered a brief address, after which letters were read from President Grant and Gov. Dix, expressing heart-felt sympathy with the object of the association, and regretting their inability to be present at its sessions.

The only paper read before the Normal Department in the afternoon, was one by Mr. Buckham, Principal of the State Normal School at Buffalo, upon the "Relative Contribution of Scholarship and Methods to the Power of the Teacher." The Department of Elementary Instruction discussed the question: "What number of school hours daily is most profitable for children under ten years of age," the subject being opened by Mr. Rickoff, Superintendent of the Ohio schools. Mr. J. W. Dickinson, of Massachusetts, then read a report on the Kindergarten. Before the Department of Superintendence, Mr. Eliot, Chancellor of Washington University, Missouri, read a paper upon Western university education.

The exercises before the Department of Higher Instruction were the best attended, and the most interesting of the afternoon. The subject was "A Liberal Education for the Nineteenth Century," by Prof. Atkinson, of the Boston Institute of Technology. He took a very advanced view of the question, favoring an increase in the amount of study of the modern languages, and a corresponding decrease in the classical languages learned. He also thought that mathematics were now studied in a wrong and awkward manner. The paper was elaborate and careful, and hopes that it would be published were expressed.

The closing exercises were of a fragmentary character, owing to the absence of some gentlemen who were to have read papers. The President filled up the time by calling upon prominent men from the various States to address the association. The reports of committees were presented and acted upon.

President Northrop then introduced his successor, Mr. S. H. White, of Illinois, who expressed his thanks for the honor and his hopes for the future success of the association,

which, after singing "Old Hundred," adjourned until next year.

This meeting was one of the best, if not the very best, ever held by the National Educational Association. The usefulness of the association is certainly increasing. The questions discussed become each year more practical, and broader, and higher. Representative men from all parts of the country attended and in goodly numbers; "the college men" were present, the younger as well as the older ones. Prominent among the young college men were President Eliot, of Harvard, Prof. Atherton, of Rutgers, Prof. Joynes, of Lee University, and Prof. Hayes, of Washington and Jefferson College; the older ones were represented by Dr. Reid, of the University of Missouri, Dr. McCosh, of Princeton, and many others. The principals of many of our better private schools were also in attendance. Last, but not least, was a large delegation of the active, philanthropic gentlemen who represent the leading school-book publishers. As usual, they contributed not a little to the spirit and interest of the occasion. It has been said, and with much truth, that an Educational Convention, without the Book Agents, would not amount to much.

With the exception of the presiding officer, Dr. McCosh was the most conspicuous person in attendance. His venerable appearance, peculiar delivery, and readiness to speak on any and every question, made him a marked object of attention from the first. Towards the end of the session his assumption of educational infallibility became wearisome. His careless expressions as to the educational advantages of Virginia brought upon him, what most men would have considered, a severe snubbing. His absurd attack upon Agricultural Colleges, lugged in under the cloak of "Upper Schools," was manifestly a bit of spite because the legislature of New Jersey had not entrusted the agricultural grant to the care of Dr. McCosh and Princeton College. He also had the bad taste to boast of his "courage" in influencing Congressmen against an additional land grant for the benefit of Agricultural Colleges. Such Congressmen and other American citizens as observed his last winter's performances did not call them "courageous!" The associa-

tion, through Mr. Northrop, gave him every possible opportunity to harangue, and in one case he was allowed to close a discussion against all fairness and the usages of the association. The reading of Prof. Atherton's excellent paper on "The Relation of the General Government to Education," called out considerable discussion, which it was agreed should be closed by Prof. Atherton, but after the presiding officer had called upon him to make his closing speech; Dr. McCosh allowed himself and was allowed by the President to make still another speech, in which he seized the opportunity to renew his attack upon Agricultural Colleges. This betrayal of trust on the part of the President was severely censured; but the Association set the matter right by directing the Secretary to place Prof. Atherton's remarks last, with such incidental reply as he might wish to make to what had been said after his proper closing of the discussion.

The unfair advantages given to Dr. McCosh by Mr. Northrop were probably the result of a mutual admiration society, made up of these two gentlemen. The former once declared the latter, "one of the soundest educators in America," for which he got in return during the session the assurance, that, "whatever was excellent in the school laws of New Jersey was due to Dr. McCosh"! We were not aware that the excellent school system of New Jersey was of such recent growth, nor did we suppose ourselves so very badly off for "sound educators." Dr. McCosh found that his careless assertions would not be received unquestioned by the thoughtful body of teachers attending the meeting; nor could he get the resolution passed against Agricultural Colleges, even after reading his paper on "Upper Schools," which had evidently been prepared for that express purpose.

Mr. Northrop presided with the usual "grace and dignity" during the most of the sessions, and seemed anxious to please all present, and to make everything clear and plain to all, even though he was obliged to rise very frequently to elucidate what may have been said, or to explain what might admit of any further possible explanation. Some time ago one of the committee which nominated Mr. Northrop felt called upon to explain his reasons for consenting to the

nomination. His idea was that we owed Japan a compliment for taking Mr. Northrop off our hands, and he voted for him thinking he would not be here to preside. In view of the general manner in which Mr. Northrop discharged his duties as president of the association this explanation might seem quite unnecessary and uncalled for.

The place for holding the convention was happily chosen. No city in New York State affords better places for holding the meetings, and better people for entertaining the members of the association than Elmira. The local committee was most affable, prompt, efficient, and indefatigable. They had made every preparation and had forgotten nothing that could contribute to the comfort and success of the convention.

NEW YORK STATE TEACHERS' ASSOCIATION.

THE twenty-eighth annual meeting of this Association began at Utica July 24th, the President, Edward Danforth, in the chair. After an address of welcome from the Mayor, the President delivered his annual address. He gave a concise history of the public school system of the State, and then directed attention to the present methods of instruction. "There is a disposition for the display of ostentatious learning, rather than useful culture, a desire for immediate results rather than for the gradual healthy development of the mind. The remedy for this evil of 'cramming' is to be found in an adequate supply of qualified teachers, and in a more thorough supervision of the schools."

The report of the Standing Committee on Education was made. Among its recommendations the most important was, that the office of School Commissioner be removed out of the sphere of local politics; and that the appointments be made hereafter by the State Superintendent, or by any appointing board chosen by the Governor; and, further, that the salary of the Commissioner be so increased as to secure competent men, who will devote their whole time to the

duties of the office. During the evening Dr. Lewis, of Boston, delivered a very entertaining and interesting lecture on "Eyes and Ears."

On the following days papers were read by Prof. Hannibal Smith, of Watertown, on "The Academy as an Organic Part of a System of Public Education;" by Superintendent Beattie on "Supervision in Cities;" by Commissioner Selden, of Genesee County, "On Supervision in the County Districts;" by Prof. McVicar, of the State Normal School at Potsdam, on "Improved Methods of Education;" and by Dr. Jewell, of Greenbush, on "Teachers' Institutes—their Necessity and Inefficiency." Committees were appointed to devise a plan for the organization of an institute that shall secure the attendance of the best educators of the State to carry out reform, and to procure from the Legislature an appropriation of \$15,000 for the expenses of teachers at the State Teachers' Association. At the election of officers, Mr. Andrew McMillan, of Utica, was chosen president for the present year. The meetings of the Association were well attended, and much interest was manifested in the discussion of the papers read.

UNIVERSITY CONVOCATION.

THE tenth annual University Convocation was held at Albany July 29th, 30th and 31st. Chancellor John V. L. Pruyn presided. The exercises were highly interesting, a variety of subjects being discussed. The relation of science to religion received much attention. The ministry as a class have been accused of hostility to science, but the truth is that they are ready to accept scientific facts established beyond a doubt. The ministry is not opposed to *true* science. A paper on the "Duty of Academies" was read by Mr. Elisha Curtis, in which he urged the importance of raising the standard of those institutions. They fit a large majority of teachers for their work, and it is necessary that they should be improved. Interesting discussions were held upon the importance of the moral element in

teaching, the æsthetics of language, and the study of the classics. The sessions of the third day were devoted to the discussion of grammar, and the consideration of the advisability of combining religious with secular instruction. Chancellor Pruyn was elected to represent the convocation at Brussels in October next, at the meeting called to frame an international code of laws, looking to the preservation of peace among the nations. Some of the papers read during the convocation were ably prepared and will, when printed, be valuable accessions to educational literature.

CONVENTION OF GERMAN TEACHERS.

ON the 28th of July the German Teachers' National Association assembled in St. Louis. Mr. W. T. Harris, Superintendent of the St. Louis public schools, made an address of welcome. He noticed the efforts which have been made to incorporate German into the studies of the common schools, and the obstacles which had been encountered. The object is twofold ; to preserve for the German-American the continuity of his historical connection with his fatherland, and to furnish a bridge over which the American approaches the German, by learning a foreign language for the sake of business and culture. In the schools both classes of pupils study English. Dr. Douai read the report of the committee delegated to the Boston National Teachers' Association, by the third German-American Teachers' Association. The purpose of the delegation, which was to establish more cordial relations between the Associations, was fully accomplished. A committee was appointed to lay before the Elmira Convention a plan for the establishment of Kindergarten in the public schools. Dr. Christin, German Superintendent of the Public Schools of St. Louis, presented a report of German instruction in that city, from which we make the following extracts: 11,838 pupils participate in German instruction ; of these 8,281 are German-Americans, and 3,557 Anglo-Americans. The

latter constitute about one-third of the entire number ; 246 of these, 156 Anglo-Americans, and 90 Germans, visit the High School and its branches. They are taught by five teachers, in twelve classes, at the rate of about forty-five per day. The district schools are visited by 8,191 German-Americans and 3,401 Anglo-Americans—in all 11,592. These 11,592 pupils, who participate in the German instruction, receive their lessons in 666 classes and by sixty-four teachers.

PHILOLOGICAL CONVENTION.

THE fifth annual convention of the American Philological Association met at Easton, Pa., July 22d. At the opening exercises addresses were made by the President, Dr. Kendrick, of the University of Rochester. Papers were read by Prof. Louis R. Packard, of Yale, "On Some Points in the Life of Thucydides," and by other members on "Some Passages in the Germania of Tacitus," and "A Vocabulary of the Language of the Indians of San Blas, and Caledonia Bay, Isthmus of Darien." Prof. Fischer, of Rutgers, Prof. March, of Lafayette, Prof. Allen, of the University of Wisconsin, and others participated in an interesting discussion upon these papers. On the second day some of the subjects discussed were, "The Great Harris Papyrus," a manuscript found in a mummy-pit in Thebes, "English Grammatical Terminology," "The Old Italian Language," "Classification of Greek Conditional Sentences," and "Method of study of Comparative Philology in a College course." During the day a series of resolutions were passed in memory of Prof. Hadley. At the third days' session papers were read on "Latin Pronunciation," "The Acquisition of a Double Mother Tongue," "The Pronunciation of Latin as Presented in Recent Grammars," "Latin Discussions of Grimm's Laws," and "The Specific use of English Words."

The next meeting will be held at Hartford, Conn., July 14th, 1874. An address by Dr. Kendrick closed the convention. Francis H. March, of Lafayette College, was elected president for the ensuing year.

CREAM OF THE EDUCATIONAL MONTHLIES.

THE first article in the *American Journal of Education* advocates the study of entomology, preferring it to botany because it deals with sentient life, and rejecting zoölogy and ornithology, because of the difficulty in obtaining specimens. As another writer in this paper observes, charts are often of more use than specimens in teaching, because many specimens give no more just idea of the creature represented, than does a dried herring of the finny inhabitants of the river. There are ornithological and zoölogical charts so excellent, that, by their aid, those sciences can be profitably pursued. Their economic value far surpasses that of entomology, while they all cultivate equally habits of close and accurate observation, and careful analysis. The author argues that by this study of entomology we will be able to promote the increase of the beneficial species. Now bugs are well enough in their way, but we do not feel like encouraging their increase, nor do we well see how we should set about it. "Illiterateness & Science" maintains the necessity of Latin for scientific men, since their vocabulary is so largely drawn from that language. It is needful for culture too, for, as it is, the majority of graduates from our scientific schools cannot speak, or as the writer has it "talk," good English. An excellent feature of the *Journal* is its correspondence from various States.

Mrs. Lane's explanation of the Kindergarten system, and her summary of its advantages, in the *California Teacher*, will be appreciated by many who have no clear idea of aims and the *modus operandi* of Froebel's system. Its success, and consequent rapid introduction into our schools, has raised up a number of pretenders who really know nothing about it. Its aim is to make the subject of elementary instruction as comprehensible and easy as possible, and its system is really nothing but a development of what every intelligent mother does for the education of her child. Its principal benefit is that it does not torment a child with learning dry details before his brain becomes fairly matured, but teaches him in a more sensible way. The success of the Kindergarten and

Object Teaching system is undoubted, but there is danger of pursuing them too far. Herbert Spencer announced an important educational principle when he said: "Up to a certain point, appliances are needful for results; but, beyond that point, results decrease as appliances increase." The other subjects treated of in the *Teacher* are: "Object Teaching," "Primary Drawing Lessons," and "Instructions regarding the Course of Studies."

The Kansas Educational Journal.—Contents: "The State Association," "Is it right?" and a few editorial notes. The author of *Is it right?* condemns the action of some teachers, who, after graduating from the Normal School, abandon teaching at the first opportunity. He argues that since the State has furnished them with books and tuition free, it has a moral right to demand that they should teach for at least a reasonable time. This is sound reasoning, but we suspect that the State gets a fair return for its outlay; the deficit of the few is made up by placing all upon starvation allowance. It is not strange that people should be anxious to leave a profession demanding so much preparation, and furnishing such small returns. It is certainly a detriment to the schools to change teachers often, but we know no remedy for the evil so effectual as an increase of salary. Improvement in this is gradually going on, but it is so very gradual that it is discouraging. The *Journal* will hereafter be published twice each month instead of monthly.

Pennsylvania School Journal.—Contents: "Our Lost Children," "How I made my School-room attractive," "Obstacles Ignored," "Geographical Teaching," etc. The August number of the *Journal* is fully up to its high standard, and, would space permit, we would like to notice several of its articles. Annabell Lee touches upon a practical subject, and tells, in a pleasant way, how she made her school-room attractive. Although the name is an assumed one, we are assured that she relates an actual experience. A persistent attack upon the directors secured maps, curtains, and a stove; a concert given by the school paid for some charts; and subscriptions, always headed by the teacher, raised money for a looking-glass, towels, &c. In addition, engravings from magazines, and pictures from illustrated papers, were framed

in straw and hung upon the walls. Better than all, a library was commenced, and is constantly increasing in size and value. The result of these labors is that the room is much more attractive than it formerly was; but a still better effect is, that it has brought the teacher and pupils nearer together. It is a great thing to get children to feel that their teacher is interested in them. They yield a readier obedience, and work more faithfully to "please teacher." We hope her success will encourage others to beautify their school-rooms.

"Is there not too much time wasted in our Schools?" is a question raised in *The School*. The writer thinks that spelling and reading occupy too much time, and that they could be learned more rapidly by the word method. It is true that these studies are pursued for several years, but we must not forget that writing, history, geography, grammar, and arithmetic, are taught in connection with them, so the pupils after all accomplish a great deal. The attention given to arithmetic, and especially to higher mathematics, is regarded by the writer in the *School* as excessive. These "mathematical curiosities" are valuable; training is of more worth than knowledge in schools. In this view it is not at all strange that mathematics should, in this practical age, hold an honored place in schools from which Latin has been excluded, because its practical utility is doubted. The neglect of teachers to lead pupils to apply their knowledge to every day life is noted in *the other original article* of the *School*. It is a real evil. In grammar, for example, children learn to conjugate "I am," "thou art," &c., and in conversation say, "I be." It is true that home association is partly responsible for this, but the teacher is answerable in a greater degree.

THE Northwestern Christian University is to be removed from its present location at Indianapolis, Indiana, to Irvington, a town three or four miles east of the city. It obtains a fine campus and \$150,000 by the removal, and expects to sell its property in the city for \$300,000, which will make a fine endowment.

CORRESPONDENCE.

DISTEMPERED CRITICISM.

“DEATH, Sir!” cried the indignant Dennis, in Pope’s famous satire, “criticism is no distemper, but a divine art!” And though the satirist put these words into the critic’s mouth as a bombastic flourish, they convey scarcely more than the truth. A sound, healthful criticism is to literature what gardening is to flowers; its office is not merely the uprooting of weeds and the pruning away of excrescences; its nobler and more important function is to tend and cherish the valuable plants, and to foster their growth and development. A person whose sole idea of horticulture was to hack and slash away among the shrubs and flowers, intent only upon displaying the keenness of his knife or the vigor of his arm, would hardly be called a gardener; and a literary censor whose views of his own calling are similarly limited, can hardly be termed a critic—or, if a critic, one to whom criticism is not a divine art, but a distemper.

I have been led to these remarks by reading an article in the June number of the AMERICAN EDUCATIONAL MONTHLY, in which an assault, apparently intended to be very severe, is made upon Prof. Holmes’s *First Lessons in English Grammar*. In the case of this assailant, his criticism is very evidently not an art, but a distemper. The characteristic symptom, which enables me to speak so confidently, was noted by Galen some seventeen centuries ago, and called *karpologia*. I find it here very well marked. It consists in a fretful and pertinacious picking at imaginary specks, straws, and the like, and indicates, physicians tell us, a very enfeebled condition of the brain.

Under these melancholy circumstances, the reviewer begins by informing us that he “believes in illustrations,” that they “are efficient and admirable aids in imparting instruction.” “In geometry and surveying,” he proceeds, “cuts and diagrams are almost indispensable.” Here be truths, no doubt; but are these what are called illustrations? It will certainly be news to many young geometers, racking their brains over Euclid, to know that they are

studying an illustrated edition of that abstract work. Certainly, if this be the meaning of illustration, the critic is quite right in saying that it can but rarely be applied to grammar, nor does he charge Prof. Holmes with the attempt. The crime in his eyes is, that when the author was debarred from one mode of illustration, he should venture on any other; the absurdity that acidulates his blood, is that a grammar—even for young children—should have pictures in it.

Now, a critic who had not reached the karphologic state would probably have asked himself, "Do these little pictures render the book at all more attractive to young children—to whom, heaven help them! grammars are likely to be dull and repellent enough, let us do our best? Can they be used occasionally as giving a visible illustration of parts of the text? And if so, do they in any way interfere with the child's acquisition of grammar? If they do not so interfere, what reason is there for objecting to them?"

But our critic fastens upon three of these illustrations as "specimens" of that absurdity. "To illustrate that the component parts of the sentence 'Ships sail on the sea,' are words, the learner is called upon to view a picture, not of ships, but of a barque, a schooner, a sloop, and a row-boat, moving over tolerably rough water, the barque crossing the path of the schooner, and the two propelled by winds seemingly blowing in opposite directions." A barque, a schooner, a sloop, and a row-boat! Bless his nautical knowledge; though as to the opposite winds, he seems to have forgotten that vessels can sail on opposite tacks with the same wind. But it would seem that the reviewer never heard of *ships* as a generic term. Had he a share in the revision of the Bible, we suppose that instead of saying "there were also with him other little ships," he would render the passage "there were also with him small lateen-rigged xebecs and polaccas."

So "the illustration of conjunctions" by a picture representing a steam-tug towing a ship with a row-boat attached to it, is, in his opinion, "ridiculously absurd and meaningless." But suppose Prof. Holmes did not mean this cut as a diagram showing the use of conjunctions, but as a pictorial

presentation of the sentence beneath it: "The steam-tug *and* the ship *and* the boat," etc., which sentence illustrates the use of the conjunctions—suppose this, and where is the ridiculous absurdity of the picture?

But I fear our reviewer has a graver symptom than karpology, a symptom showing want of healthy tone in another organ than the brain, and this symptom is disingenuousness. When he says "the 'Practical Suggestions to Teachers,' . . . instead of following immediately after the preface, are placed as an appendix at the end of the volume, so that a teacher may not see them till he has gone through the book," why does he conceal the fact, which he must have noticed, that on the very first sentence of the first page of the text, the attention of teachers is expressly directed to these Practical Suggestions, and the page indicated on which they were to be found?

But when he says, "the directions to the learner as to the use he is expected to make of the 'Exercises' . . . are often placed after the exercises," he asserts what is simply not the fact. The directions, and the examples showing how to apply the directions, when such are given, are *uniformly* placed before the exercises; though sometimes additional use of them is suggested at the close.

Two more minute karpologic pickings at fancied specks, and an expression of general contempt, wind up this notable review, in the whole of which there is not only no sign of an attempt to see whether the book had merits, and what they were (which the reviewer evidently considered no part of his duty); but no attempt even to show that it is not, altogether, a very suitable book for its purpose, that of giving young children some intelligent idea of the rudiments of grammar: nor is there a particle of evidence that the reviewer himself is at all qualified to judge its suitability. Either the critic's power of fault-finding was by no means commensurate with his will, or the book itself must be singularly free from defects, since his whole indictment against it consists of two or three feeble pickings at straws, one disingenuous and one erroneous statement, and a flourish about what he could do if he had more space to do it in.

W. HAND BROWNE.

EDUCATIONAL INTELLIGENCE.

ALABAMA.—In consequence of the failure of a number of counties to forward proper annual reports within the time required, the school statistics are very incomplete. The State appropriation for 1872 was \$604,978.50, while \$2,082.47 remained in the treasury from the school funds of the previous year. Of this sum \$607,060.97, all but \$1,641.42 was expended for school purposes during 1872. The number of children is not given. The Superintendent of Public Instruction estimates that there are 383,000 persons in the State unable to read or write. Of these 92,000 are whites. A large number who are classed among the educated verge so closely on illiteracy, that, for practical uses, their education is of little avail. Horace Mann expressed the opinion that this class formed a third of the so-called educated. These added to the number quoted above give us in round numbers 589,000 illiterates. It is asserted that the uneducated voters of Alabama number 144,000. We must recollect, however, that a large number, about five-sixths, are negroes, who have not until lately had any educational advantages. The proportion of illiterates will, undoubtedly, decrease as the negro children, who are now attending school, grow up.

GEORGIA.—The State School Commissioner says: "It is not to be disguised that the effort, thus far, to establish a public school system for the State has resulted in comparative failure. It is well known, however, to all who have sought to inform themselves, that the causes of failure are not to be traced to anything inherent in the system itself, but to maladministration. With the State School Fund secured, as it now is by the wise legislation on that subject adopted by the last General Assembly, and with this fund promptly distributed and wisely used, we may hope to see a good work begun this year, which shall recommend itself by its fruits." The maladministration referred to is the appropriation of the school fund to other purposes. On October 1st, 1872, \$354,418.39 had been illegally used. The school population numbers about 370,000, but so many chil-

dren are obliged to work at home that probably not more than a third of that number will attend school.

ATHENS.—When the Georgia State University began again after the war, it was almost entirely disorganized. It had only fifty-seven students, five professors, and a capital of \$300. Now it has 320 students, sixteen professors, and excellent libraries, apparatus, etc.

INDIANA.—Each State Superintendent expresses alarm at the increasing number of persons unable to read or write. In Indiana the illiterates number 127,124, of whom 39,509 are voters. According to the last U. S. census there are 5,600,074 illiterates in the country. With few exceptions moral suasion is the only power employed against this mass of ignorance. State Superintendents, however, and those interested in education generally advocate the adoption of compulsory laws. The total school population of Indiana is 631,549, and of these 459,451 attend public schools. 12,246 teachers are employed. The estimated value of school property is \$9,199,480.15. Numerous new schools have been opened since the last report, and the old ones have been improved. Altogether the educational outlook in this State is good.

INDIANAPOLIS.—The expenditures of the public schools, for the year just closed, were \$240,000. The estimate for the year 1873-4 places them at \$300,000. Ten years ago they did not cost over \$10,000 a year.

PENNSYLVANIA.—The twentieth annual meeting of the Pennsylvania State Teachers' Association, which was held at Pittsburgh, adjourned Aug. 14th, after a three days' session. In the absence of the President, Edward Gideon, of Philadelphia, the first Vice-President, G. P. Hays, D.D., of Washington College, occupied the chair. Papers were read upon the following subjects: "Physical Features of the Mississippi Valley," by B. C. Jillson, of Pittsburgh; "Superintendency of City Schools," by Edward Shippen, of Philadelphia; "What can our Schools do to Quicken the Public Conscience?" by Edward Brooks, of Millersville; "Organization of Township Schools," by H. S. Jones, of

Erie; "Conflict between Science and Theology," by E. A. Wood, M.D., of Pittsburgh; "Natural Science in Public Schools," by Lemuel Amerman, of Mansfield; "Our Normal School Policy," by J. A. Cooper, of Edinboro'; "Moral Instruction," by E. H. Cook, of Columbus, Ohio; and a lecture on "Sound," illustrated by experiments, by A. A. Breneman, late of the State Agricultural College. After the reading of each paper, the subject was open for discussion by the members of the Association. The most interesting discussion was upon the paper read by Dr. Wood, of Pittsburgh, on "The Conflict between Science and Theology." The doctor seemed to maintain that theology had always opposed science, and had held back society in its progress. Incidentally he defended Darwinism. This aroused an animated discussion, in which Prof. Brooks, Principal of Millersville State Normal School, Dr. Cattell, President of Lafayette College, Easton, Prof. Burtt, of Pittsburgh, Dr. Hays, President of Washington College, and one or two others, took part. It was probably the ablest discussion ever held before the Association.

There were 667 teachers enrolled, the fee being \$1 each. Fully one-half were from Alleghany County. The afternoons were spent in visiting the glass-works and other manufacturing establishments of the city, and in an excursion down the Ohio river.

George Lucky, of Pittsburgh, was chosen President of the Association for the next year, and the place of meeting for 1874 was fixed at Shippensburg, Cumberland County.



"A MANUAL OF METHODS" for a Complete Public School Course of Instruction has been prepared by Henry Kiddle, A. M., City Superintendent of Public Instruction, New-York, Thos. F. Harrison, First Assistant Superintendent of Grammar Schools, New-York, and N. A. Calkins, First Assistant Superintendent of Primary Schools and Departments, New-York. This Manual has been arranged in a course of ten grades, each grade containing a list of subjects to be taught,

explanations as to the matter, and directions relative to the method of teaching.* The usual school studies have been graded systematically, so that the Manual may be used in any city or country school. It will prove a reliable guide to any course of instruction. It is now in press, and will be ready within a few weeks.

MISCELLANEA.

THE new telescope being made at Cambridgeport, Mass., for the Washington Observatory, will, it is said, be the largest in the world. The object glass will have a diameter of 26½ inches, and the tube a focal distance of 32 feet. The total cost of the telescope and its requisite machinery will be \$30,000, of which the object glass alone will cost \$27,000. It was cast in England, and finished in Massachusetts.

THE Social Science Congress is to be held at Norwich, England, from the 1st to the 8th of October next. There will be an exhibition of educational, sanitary, domestic and scientific appliances for improving the public health, and promoting education and the public welfare. The exhibition will be open to exhibitors from all parts.

WORKING of the optional system at Dartmouth : Calculus and Greek are optional during a part of the course. The following extract from the first recitation of a certain class in Calculus is instanced :

Professor.—" R., what is the object of studying Calculus?"

R.—" To get rid of Greek, sir."

MR. E. STEIGER'S collection of American Periodical Literature has been awarded a medal for merit at the Vienna Exposition.

ONE of the young ladies, recently examined in a Southern city, asserted, in answer to one of the questions, that Apogee and Perigee are States in South America.

DURING the past year \$135,840 were given to Southern schools from the Peabody fund.

THE new-fashioned degrees which the smaller academic institutions are in the habit of conferring so lavishly have so exasperated the Worcester (Mass.) *Spy* that it suggests as an appropriate sequence to the "M. E. L." (signifying "Mistress of English Literature") conferred by a ladies' seminary in New Jersey, the degree of "M. P. A." (signifying "Master of Primary Arithmetic") for the lowest grade of schools.

THE Syracuse University has organized a college of Fine Arts. Courses of study have been prepared in architecture and painting, each course extending through a period of four years. Prof. George F. Comfort, A.M., is dean of the school.

THE trustees of the Indiana State University have determined to increase the salaries of all professors who have served ten years or more from \$1,600 to \$2,000. The amount of the President's salary is changed from \$2,000 to \$2,500.

A JAPANESE paper states that three hundred and eighty-two Japanese students are studying in Europe, America and China. Of these five are women.

MICHIGAN University will have eighty-eight women students during the next college year. Nine will take the law course, thirty-seven the medical, and forty-two the academic.

A WESTERN post-mistress has resigned her position, because she cannot find time to read all the postal-cards and conscientiously discharge her other duties.

PUBLISHERS' DEPARTMENT.

RECREATION—THE SCHOOL STAGE.—Messrs. Wilson, Hinkle & Co., (Cincinnati and New York,) have just published *Venable's School Stage*, a Collection of Juvenile Acting Plays, for school and home. Sent by mail post-paid on receipt of price, \$1.25. A fuller announcement will appear in the next number of this journal.

A NEW WAY TO SEE STARS.—Dr. Clark's *Astronomical Lantern* will be ready in a few weeks. It consists of a tin lantern, with a ground-glass face.

Thirty-two constellations are photographed on semi-transparent slides.

AMERICAN EDUCATIONAL MONTHLY.

OCTOBER, 1873.

COMMENTS AND CRITICISMS.

COULD Shakespeare and Milton return to the world and read the commentaries that have been written upon their poems, they would doubtless experience a variety of emotions. What some of these feelings would be, we need not question. They would be amazed at the repeated exhibitions of apparent dullness on the part of their commentators in failing to comprehend what was so plain to themselves, and at the marvellous meanings consequently attached to their words, not one of which they themselves had had the remotest idea of. They would pity the prejudice and perversity that insisted on making their words mean what they themselves never dreamed of. They might also be amused at the complacency with which the critic in his ignorance undertook to explain a seemingly mysterious passage, or to point out errors that did not exist. But these writers can never return, and the worthlessness of the labors of their commentators can never be truly known.

These thoughts were suggested on perusing, in the August number of the *Galaxy*, Richard Grant White's comments upon my article, entitled "Had Rather," which appeared in the February number of this journal. As he found it necessary, in what he said in respect to that article,

to employ nearly two words to my one—though, says Mr. White, “there is very little of it that concerns me, and that little is easily disposed of”—I may, perhaps, be allowed to offer a few additional remarks by way of correcting some of the errors into which he has fallen.

In speaking of my article, he says, “The only wrong done me by the author of the article in question is that he speaks of my little paragraph as ‘the latest instance of this kind of criticism,’ meaning the auxiliary and the parsing kind.”

On this I have three remarks to make. The first is, that I wish I could say of Mr. White that the only wrong he has done me in his essay is the perversion of my meaning in merely this one instance. I am sorry to say, however, that he has misconstrued or perverted my words in more cases than I shall notice or care to notice.

The second is, that if Mr. White had read my words carefully he would have seen that my meaning was not what he says it is. I had said that “it has become popular of late years to condemn this form of speech, and suggest another instead.” After instancing an example of this, I referred to his criticism as the latest specimen of the kind I had noticed. The “kind” to which I referred was the popular condemnatory mode of dealing with this expression in which he had inconsiderately indulged. His comment—“the auxiliary and the parsing kind”—to say nothing of its ungrammaticalness, is purely gratuitous—an apparent attempt to raise a dust to blind the eyes of others, so that he might beat a retreat unnoticed and by a flank movement come around and appear on common ground with his disinterested readers.

The third remark is, that Mr. White seems altogether too sensitive about being taken for a grammatical critic. He is very studious to have it understood that grammar is not his province. Of parsing he knows nothing, never did know anything. In English grammar he has no faith: English, to him, is a “grammarless tongue.” The “grammatical” character of *had rather* or any other expression “is nothing at all to his purpose.” “Let the dead in grammar bury their dead. It is none of my funeral!” he exclaims in language of doubtful propriety. He cares nothing about whether language should “parse” or not. The question as to the

correctness of the form *had rather go*, he says, "is not a grammatical one." What then? Why, it is a "linguistic" question, and Mr. White is a "linguistic" critic! All that he wants is that people should use language "logically," that their "phraseology" should be "self-consistent." It is news indeed that the question respecting the form under consideration is not a grammatical one, when the sole objection raised against it is, really and in plain English, that it is "ungrammatical." Perhaps such questions as whether *you was* is correct, or whether "*such* is ever correctly used as an adverb," and the like, are not "grammatical" questions! I had supposed they were. But as Mr. White treats of them under the head of "Linguistic Notes," I must, of course, be in error. I had imagined that linguistics treated of something different from questions of "the parsing kind." But, lest I should again incur the charge of being "magisterial and severe" in the tone of my remarks, I defer to Mr. White's superior knowledge, and suppose he must be a writer on linguistics, though I am unable as yet to see it.

Again, Mr. White quotes my words, "Consistently with grammatical principles, as well as with long-established, unquestioned English usage, and that, too, of the best and most careful writers in the language, we hesitate not," etc. Commenting on this, he says that here is to be found "the assertion that this usage is 'unquestioned'—an assertion which seems to have been too thoughtlessly made. I deny it. . . . Manifestly, the fact is directly to the contrary of this writer's too inconsiderate, and unjustified assertion. The phraseology *is* questioned." I confess, I am amazed at such "inconsiderate" statements on the part of my commentator. I spoke of *had rather go* as a form of speech consistent "with long-established, *unquestioned English usage*." This, Mr. White says, only four lines further on, "is a mere repetition in substance, and even in words," of what he himself set forth! And yet the statement of the writer in the EDUCATIONAL MONTHLY is "too inconsiderate!" It was "too thoughtlessly made!" I do not wish to have even the appearance of being "magisterial and severe," but I must say that Mr. White here seems to me to be want-

ing somewhat in "self-consistent phraseology." Nor is this all: my logical commentator virtually charges me with nonsense. What does he mean by the ambiguous assertion "The phraseology is questioned?" Certainly not that its *use* is questioned, or that its being an *English* use of words—which was the point I made—is questioned. "It has the sanction," says Mr. White himself, "of usage for centuries, not only by the English-speaking people generally, but by their greatest and most careful writers." Does he mean that the *propriety* of the combination is questioned? This is just what my entire article implies. I assumed it, and aimed to show that those who questioned its propriety are in error. And yet is not this what Mr. White really means? If so,—and I can attach no other meaning to his words,—then not only does he mean to say that I assert that neither he nor any one else has ever questioned what I aim to show he errs in questioning, but he fails to say what he means. It really strikes me that the assertion that "the phraseology is questioned," is a little "too inconsiderate;" it "seems to have been too thoughtlessly made." It moreover strikes me that it would be as well for Mr. White, as for his pupils, to follow the rule which he lays down for their use; namely, "to select the words *that will convey your meaning*," and arrange them in proper order. Had he done so in this case, he would of course have said, "*The propriety of this phraseology is questioned.*" But by so doing he would have punctured his little balloon, and lost his gas. We trust, however, as Mr. White is an advocate not only of "logical and self-consistent phraseology," but of language suitably chosen to express one's real meaning, he will in future show his appreciation of these characteristics of a good writer by his consistent practice as well as by his wholesome precepts.

Again, Mr. White quotes my words, "Commonly, futurity is not expressed in English by a single word." By "commonly" I meant "usually," "customarily." In making this exception to the universality of the application of the remainder of the remark, I had in view more especially the imperative form, which, though generally designated a present, is really a future; *i. e.*, if denoting an action or state belonging to future time is the condition essential to a verb's

being in the future tense; as, "*Strike*, but *hear*;" "*Go* and *see*;" "*Sing* us a song." Occasionally, no doubt, the present indicative is used for representing futurity rather than present time; as when the poet makes Catiline say "I go, but I *return*." So also, "*Come* ye not at my bidding?" Now, Mr. White, strangely misunderstanding my remark, flies in the face of it, as though he was sorely pressed for something to say, and exclaims, "On the contrary, it is, and has for centuries been *very commonly* [very usually! very customarily!!] expressed by a single word; *e. g.*, 'I go a fishing;' 'I sail for England to-morrow;' 'He marries her next week.'" With all due deference to Mr. White's perception of futurities, I deny that the verb alone in either of the last two of these examples denotes futurity. The idea of future time is embodied in other words. Mr. White ought not to adduce such questionable examples in proof of his statements if suitable ones are so "*very common*" as he would have it appear.

He controverts my position that the so-called future tense of English verbs "is simply a combination of two present tense forms." He says, this "assertion is untrue;" the so-called future tense of English verbs "consists of the combination of a present with *an infinitive* form." Wonderful! But what tense of the infinitive? I beg pardon! Mr. White is not a grammarian. And, though he talks about tenses and modes, his English is a grammarless, and of course tenseless, tongue! Enough if it is "logical" and "self-consistent!"

As an illustration of the fact that *have* does not always denote possession, I adduced the sentence "I had to inquire my way." In a sentence like this I claimed that *had* denotes compulsion or obligation. This is obvious enough from the fact that the sentence means "I was compelled or obliged to inquire my way." Here, *was compelled* and *was obliged* are perfect synonyms and substitutes of *had*. Yet Mr. White says, "If it [*i. e.*, *have*] ever implies or seems to express any other meaning [than possession], that is only in virtue of the association of ideas, or by [a] figure of speech." And he adds, "In the sentence 'I have to go home,' obligation is expressed; but it is expressed by the sentence as a whole;

in this and in all other cases of a like construction, *have* expresses simply present possession." I don't see this. Does Mr. White, in the equivalent sentence "I must go home," see that *must*, too, "expresses simply present possession?" I don't. If he thinks that the obligation here as well as in the other instance "is expressed by the sentence as a whole," I beg leave, most respectfully, to differ with him. His representing that compulsion, obligation, or necessity is possession does not make it so; some better proof of this is needed than his simple dictum. He might as well say that bondage, or poverty, or destitution is possession.

But I find I am spending too much time over these "Linguistic Notes." I might point out other errors into which their author has fallen. But I forbear. I desire, in conclusion, merely to call the reader's attention to an example of Mr. White's expertness at what I infer to be his "linguistics." I had said that he erred in representing that *had* constantly and universally "expresses perfected, past possession." In evidence of this I adduced, as one example, the sentence "I have had this cold for more than a week," and thought I made it clear that, if his position were true, the prefixing of *have* to *had* could not make the words express a possession still continuing. The following is his lucid and masterly reply: "In the sentence 'I have had this cold for more than a week,' . . . *had*, in my judgment, can express only past possession. The whole sentence expresses both past and present possession, but *had* only that which is past. 'I had this cold for more than a week' expresses the possession of the cold for more than a week at some time past. 'I have this cold' expresses possession of the cold at the present time, and we cannot add 'for more than a week,' for that takes in past time. And if we wish to express past possession also, we must combine *had* with *have*." Now, for one who makes any pretensions whatever to being a grammatical critic to write like this, is simply ridiculous. The reasoning, if such it can be called, evinces palpable ignorance of the true character of the words under consideration.

In the first place, Mr. White mistakes the nature of a possession, considered with reference to its duration. In say-

ing "*Had*, in my judgment, can express *only* past possession," he repeats in different words the erroneous idea, previously advanced, that *had* constantly and universally "expresses *perfected* and past possession." To show the falsity of this position, take some word that is of this character, some word whose meaning obviously belongs only to the past—*buried*, for example. This word, like *begun*, *commenced*, *broken*, *shaken*, *eaten*, *asked*, *made*, *drawn*, and hundreds of others, expresses not only a past but perfect act. Now, though the prefixing of *have*, as in the sentence "I have buried my father this week," may cause the verb—*have buried*—to denote an act performed in a period of time extending up to the present moment or the moment when the words are supposed to be uttered, yet neither does *have buried* nor even the entire sentence in which it stands "express both past and present" action. Still, Mr. White says, "*I have this cold* expresses possession of the cold at the present time. If we wish to express past possession also, we must combine *have* with *had*." By parity of reasoning, I might say "I have a father" expresses something now mine. If we wish to express something past also, *i. e.*, something both past and present, we must combine *have* with some word that expresses a perfected, past act, as *buried*—"I have buried my father." But the argument doesn't hold good. *Have buried* does not express an act, as *have had* in the given sentence does a possession, embracing both past and present time. Nor is *had* alone in this respect: *lived*, *loved*, *owed*, *hoped*, *hesitated*, *worn*, *suffered*, *endured*, *honored*, *retained*, are samples of hundreds of words of the same nature that will occur to any one on reading a few pages in the first book he may take up. So much for Mr. White's insisting that *had* can express only past possession. We trust that, by this time, he sees what we mean, and wherein his judgment needs correcting.

In the second place, he mistakes the character of *have* and *had* in the combination under consideration, in which, by resolving the sentence into "I had this cold," etc., and "I have this cold," he would make it appear that *had* is the imperfect or preterite, and *have* a verb denoting possession. But neither of these is the case. To make this clear, take,

instead, the sentence "I have worn this coat all the week." Now, according to Mr. White's "linguistics," "I *worn* this coat all the week" expresses, in unexceptionable English, the wearing of the coat for a week at some time past! But any school-boy who believes in English grammar knows that *worn* here, or *had* in the other case, is what is called the past "participle" form, and as such is incapable of expressing with a noun or a pronoun an "affirmation." In a word, Mr. White errs in taking the *had* of the combination *have had* and using it in framing the sentence "I had this cold," etc. He might as well say, "I gone," "I been there," "I written it," "I spoken it," "I known him," "I seen him," "I done it."

Again, according to Mr. White, the *have* of the combination *have worn* is in every respect the same as *have* in the sentence "I have this coat," and consequently expresses not merely possession but present possession. Now, for one, I confess I fail to perceive, in the expression "I have worn," any more of the idea of present possession than in the words "I am wearing." Indeed, if this idea predominates in either case, it seems to me it is in the latter—"I am wearing." But really it exists in neither, any more than what necessarily inheres in the meaning of the word *wear*. In the two expressions "I wore" and "I have worn," I fail to see any difference whatever in meaning except in the matter of the time implied. Even in the sentences "Have you worn the coat?"—(answer) "I have," in the latter of which emphasis is laid on *have*, the idea of possession is no more apparent than in the word *did* in the sentences "Did you wear the coat?"—(answer) "I did." Compare also the forms "I lost" and "I have lost," "I was" and "I have been," "I gave" and "I have given," "I ran" and "I have run." What difference in the meaning except as respects the time implied? I doubt whether Mr. White or any one else sees any. And, if such is the case, all my commentator's "linguistic note" on this point amounts to nothing. It is worse. It is a mere concatenation of inconsiderate words revealing an entire misapprehension, not to say gross ignorance, of the subject. It is a sophistical attempt to evade the force of the conclusion presented, that if the possession denoted by *had* in the

form *I have had* were a "perfected, past" possession, it could not be brought up into present time by coupling *have* or any other word with *had*. The fact that such a combination as *have had* can be made, and used to denote a possession still continuing, proves that *had* does not, of necessity, denote "perfected, past possession;" which, if it is anything, is a possession neither consistent with nor admissible in present time.

S. W. W.

THE ART OF SPEAKING THE TRUTH.

I.

TO doubt a man's word is esteemed a rudeness, I have sometimes thought, on the same principle that people who live in glass houses are advised not to throw stones. The old Psalmist said in his haste "All men are liars;" I have heard of a modern divine who, after watching the ways of the world for years, scrutinizing his own conduct more or less faithfully, has deliberately come to pretty nearly the same conclusion. We hardly need testimony however to convince us that dishonesty is very prevalent. One who has come to love and reverence the truth is pained every day to see how little regard is shown for it even among its professed disciples. A man with a certificate of church-membership lays his hand upon his heart and looks up to heaven, but the shrewd dealer thinks it necessary to inquire privately into the facts of the case. There are credit-moblier investigations every now and then among respectable communities, the results of which are taken down privately, and nobody seems to mind so long as the victim does not know he is on the stand and nobody throws the lie in his face. Cheats, tricks and artifices are welcomed under other names by men and women who bear a decent reputation in society and reckon themselves among the good of mankind. We are sometimes shocked to find how thoroughly our own dear friends misrepresent us; nay, we are sometimes surprised to find how entirely we, ourselves, have been mis-

taken. "If words mean anything," said one lady to another, "I am sure Madam would be heart-broken if you did not come."

But the fact is, words of themselves often do not mean any thing, but must be taken in connection with the circumstances of time, place, look, gesture, the habits of society and the habits of the individual uttering them, in order to be understood. We really have a very faint conception of our obligation to the literal truth, and I have sometimes wondered if we knew how to be honest in our speech, and if there might not be something done for us respectable, well-meaning, christian people, that we may come to understand a little the right relation between words and things. The old Persians, I have read somewhere, taught their young children *in their schools* to be temperate and to speak the truth. Their *young children*—"Our children—the hope of the world," we put upon our Sunday-school banners. A while ago a man of letters came to us as with a new revelation, to tell us that if we taught the children to begin life well, the millennium would be ushered in when they were grown up. The revelation was not a new one. The wise man of almost thirty centuries back said, "Train up a child in the way he should go and when he is old he will not depart from it." But how shall the child be trained in the right way since the parents are every-body and the world is depraved?

There is another class that has to do with the masses before they have grown old, and hard, and fixed in their ways, an elect class, a professional one, commissioned by legislative wisdom and hedged about with prudential injunctions. May we not with propriety accept a hint from the people of Cyrus and look to our schools to teach, beside the first principles of honesty, the use of words, something of their value, and what they stand for? Certainly, respond our wise men, accuracy is one of the great objects of education. The university has always aimed to produce "patient seekers after truth." We tell our students that "the sum of all good things for them is, chiefly, honesty." I do not think our primary teachers understand it so. They have not been to the university, as all the world knows. It mat-

ters little, it seems to me, that a great man tells a handful of grown-up students that they are to pursue their studies in a way their conscience calls honest, since for all the years of their earlier training they may have been under guides who taught them that to get over books was education—that shrewdness was the best thing, and that honesty and truthfulness were matters to talk to liars and thieves about, and so it may be that their conscience has received such a bias that it is no longer a safe moral guide. Would we send a young man to college to learn Greek and Latin and the higher mathematics when he has not learned the alphabet of his own language, or the simplest table of multiplication, and who has an idea besides that it is of no possible consequence to learn them?—who thinks, if he thinks at all about the matter, that such things come by intuition and as a matter of course? The folly of expecting our children to become “patient seekers after truth,” or even venders of sincere words, by intuition, by religion, by a course of university training when they have reached the stature of manhood, is demonstrated before our faces every day, and our national reputation suffers at the hands of our great men. The unflattering names which foreigners call us, the distrust they manifest toward us, are small things compared with the deliberate judgment the weight of evidence compels us to pronounce upon ourselves. Says the President of Yale College of the “great mass of our ruling minds, and among them a considerable number of college graduates”: “Many of them are men of little reverence for truth and small confidence in principles. They believe in getting on by their wits rather than work, which often signifies by little of wisdom and less of honesty.” I believe the result of our school training would be different—that it would have a greater and a more beneficial effect upon the nation at large, if it were made a special object of our educational system to teach in the earliest schools the principles and the habits of honesty. Indeed, if not at home it must be in the primary public school where the masses can be reached before the character is largely formed, and while it is to some extent mobile, that our children shall obtain a regard for truth that will endure—shall receive a drill in the art of representing

things fairly, by means of words, that shall not fail them when they are grown up.

I am very hopeful about this matter. I believe that people, if they are taken at an early age, may be taught to hear a remark the first time it is made and understand it—to repeat it, if necessary, exactly as it was made; and, with the right connection, also to feel intuitively that it is wrong to repeat it in any other way. I believe that young people may be so drilled and practised that, if brought up suddenly before an investigating committee to testify about themselves, the first impulse would be to give the *correct* answer to the interrogatories, if any answer at all, rather than the honorable or polite one that they would be glad to be able to make. I may be too confident but I cannot help thinking it possible for our children to learn such notions of honesty in the public school, that when they come to be “the people,” the mass of them shall look with distrust upon the business of making money by games of chance, whether in the low saloon or the church parlors, the matrimonial or the commercial market—shall esteem merit a more desirable object of ambition than luck itself.

There is a question about the propriety of teaching religion in the public school; I think there can be none about the propriety of teaching honesty there. And when a child has learned to feel that the real thing is good, while the false semblance of it is ridiculous, that it is better to have things we pay for than things we get by chance, that he is to say that which is true rather than that which is advantageous, that he is indeed to try all things, rejecting those that are false, holding to those that are true, I think we can safely trust his religious interests to his spiritual guide in whatever church he happens to have been born.

One of the principal causes why we well-intentioned people fail of the truth often is inattention;—we fail to take heed how we hear; in our anxiety to talk we give scarcely a thought to what we say. Everybody knows how it is: we listen to a remark carelessly and repeat it carelessly, perhaps with the wrong connections; another careless listener tumbles it on with an addition, and finally we have a three-black-crow story, or a neighborhood game of “scan-

dal" played in real earnest and to the serious annoyance of all good people. The ounce of prevention for this and similar evils should begin to be applied in the first primary school. A little *cure* is needed there, too, we fear. The teacher who has a respect for sincere words, who knows that it is her business to teach their use, will be somewhat appalled when she tries, for instance, to discover the ownership of a disputed piece of property—a pocket knife, a ball, or a string; she summons a dozen witnesses and examines them carefully; she has twelve positive, distinct and different stories, and she begins to wonder if the article has an owner at all, or if it may not belong to every boy in school. It is nonsense to try to make children tell the truth about a matter of which they know nothing. They are singularly like grown people in one respect, they do not distinguish clearly between what they know and what they do not know, yet they are so fond of talking they feel that they must express themselves upon every subject. It is a good thing to teach them in the beginning to talk only when they have something to say. Is there any other reason why any body should talk?

There are many ways that will suggest themselves to the intelligent teacher by which the habit of accurate hearing may be ensured. The simple practice of never repeating a question in recitation time and making a failure to understand it a misdemeanor, of occasionally calling upon a pupil to repeat the answer of his neighbor or the teacher's own remark is productive of much good. In the well-conducted object lesson the pupil learns to pay attention and to make correct, logical answers. In this exercise he is made to look at an object for the express purpose of finding out something about it, and then to give the results of his observation in clear, concise and correct terms. Such an excellent opportunity is afforded here to expose the folly of hasty, ill-considered opinions, to correct vagueness of statement and to repress irrelevant remarks, that it seems almost a pity grown-up people can not have the benefit of such lessons under the eye of a skillful master. On a Sunday afternoon, for instance, if, instead of the regular homily, the preacher might convince his people by well-chosen experi-

ments that they did not know all about a thing when they had heard its name mentioned, and were not perfectly qualified to pass a final opinion upon a matter of which they had seen only one little corner, what a world of good might come of it !

In a public school of some merit an exercise like the following was employed with good results. It was nominally a lesson in rhetoric, and occurred once a week. The teacher brought into the recitation room a little poem or story, something with which the class were not familiar, and read it aloud. When she had finished, the pupils were required to go to the blackboard and write out, as nearly as they could remember, what she had read ; each copy was then reviewed and corrected in presence of the class—the *mis-statements* receiving first notice, and being considered greater faults than mistakes in spelling, punctuation or grammatical construction. This was a most valuable drill in attention, memory and the art of reproducing ; and the skill and accuracy with which these young people wrote out in words of their own the ideas of the text bore witness to its effectiveness.

THE Agmara Indians, inhabiting the shores of lake Titicaca, and the lofty plateau of the Andes, find the struggle for existence hard, at an altitude of more than 11,000 feet above the sea-level. Their principal articles of food are *quinoa*, a coarse grain resembling rice, and potatoes, of which tuber their country is the original home. The difficulty of boiling food at so great an altitude necessitates the previous maceration of all articles intended to be so cooked. The potato is, therefore, prepared for storing and use by exposing it to the frost ; then it is placed in water, and stamped into a paste ; all the soluble matter is washed out, and the starchy and farinaceous substance alone remains. This is called *chuno*, and it is made into a nutritious though insipid soup. The Agmaras use clay as an article of food, mixing it with *quinoa*. Careful analysis shows that it contains no organic matter, and therefore it must be used merely for the purpose of producing a satisfactory though delusive distention of the stomach.—*Popular Science Monthly*.

THE ARTIFICIAL PRODUCTION OF STUPIDITY IN SCHOOLS.

AN article under the above title recently appeared in the "London Journal of Psychological Medicine." It is aimed at English schools, but applies, however, with equal force to all schools. We present some of the ideas in this article, in some parts condensing and omitting, and in others quoting the exact words of the author.

In the young of the human species there two distinct functions of the brain distinctly concerned in education. One concerns the powers of sensation, ideation, and spontaneous remembrance. This belongs to the lower animals as well as to the human species.

The other concerns the powers of *recollection*, comparison, reflection, and volition, attributes essentially human, or at least possessed by men in common with higher intelligences alone. The powers of sensation, ideation, and spontaneous remembrance, possessed by the lower animals, are sufficient to explain all the particulars of their conduct.

The education of a child may be conducted in the direction and to the extent in which it is possible to educate a horse, a dog, or an elephant, without arousing any faculty distinctly human.

Observation teaches that it is far more easy in some children than in others to carry instruction beyond the sense perceptions, and to call the intellect into activity; but it teaches, also, that the supposed difficulty often arises from an improper selection or application of the means employed, and is simply a failure to open a lock with a wrong key. The apparently dull child not unfrequently receives the necessary stimulus from a trivial circumstance, from a conversation, a book, or a pursuit, and may grow into a gifted man.

Upon testing the educational systems of the present day, even by the most elementary principles of psychology, it becomes apparent that a very large number of children receive precisely the kind of training which has been bestowed upon a learned pig. Teachers who have studied at all

the operations of the mind, realize the existence of a kind of learning which is sensational alone. The power of intelligent attention may be aroused in the child by care, and perfected by perseverance; but the natural inclination is towards a rapid succession of thoughts, variously associated and remembered in their order, without being understood. In schools, under the pressure of the popular demand for knowledge, it is common to accumulate new impressions more rapidly than they can be received, even by children who have had training at home in the right use of their faculties. The work laid down can often only be done by means of that promptitude which belongs to instinctive action. The child who uses his sensorium to master the *sounds* of his task uses an instrument perfected for him by his Creator. The child who uses his intelligence must perfect the instrument for himself; must grope in the dark; must puzzle, must catch at stray gleams of light, before his mind can embrace the whole of any but the simplest question. The former brings out his result, such as it is, immediately; the latter by slow degrees. The former is commonly thought quick and clever, the latter slow and stupid; and the educational treatment of each is based upon this assumption, widely as it often varies from facts. The child whose tendency is to sensational activity should be held back, and be made to master the meaning of everything he is allowed to learn. He is usually encouraged to remember sounds, is rushed forward, is crammed with words to the exclusion of knowledge, and is taught to consider himself a prodigy of youthful talent. The child who tries to understand his lessons should be encouraged, supplied with food for thought, of a kind suited to his capacity, and aided by a helping hand over the chief difficulties of his path. He is usually snubbed as a dunce, punished for his slowness, forced into sensational learning as his only escape from disgrace. The master, in many cases, has little opinion in the matter. Children are expected to know more than they have time to learn; parents and examiners must have show and surface,—things only to be purchased at the expense of solidity and strength. A discreet teacher may often feel sympathy with the difficulties of a pupil; but the half-hour

allotted to the class is passing away, the next subject is treading upon the heels of the present one, the child must complete his task like the rest, and so a budding intellect is sacrificed to the demands of custom.

Among the children of the educated classes the circumstances of domestic life usually afford to the intelligence an amount of stimulus, which, if not of the best possible kind, is at least sufficient to compensate in some degree for the sensational work of school. The easy nursery lessons of the pre-scholastic age, the story-books of childhood, the talk of parents and friends, all furnish food for leisurely reflection, and serve to suggest those strange questions that are one chief evidence of thoughtfulness in the young. Minds thus prepared may often flourish in spite of subsequent excessive teaching; and by forgetting nine-tenths of what has been learned, may find it possible to understand the rest.

In what are called elementary schools, however, we do not commonly find this accidental provision against the paralyzing effects of the prescribed routine. There is in the pupils an absence of intellectual cultivation, together with a sensational acuteness which arises from a habit of shifting for themselves in small matters, which is forced upon them by the absence of the tender and refined affection that loves to anticipate the wants of infancy. They go to school for a brief period, and the teacher strives to cram them with as much knowledge as possible. They learn easily, but they learn only sounds, and seldom know that it is possible to learn anything more. In many cottages there are children, who, as they phrase it, "repeat a piece" at the half-yearly examination. They will learn for this purpose a passage in any foreign language as easily as in English, or learn an English passage backward, if told to do so. In neither case will there be any curiosity about the meaning.

The teacher explains what they repeat, saying this means so and so, and the pupils have sufficient sensational acuteness to remember the sounds he utters, and to reproduce them when called upon. They do not usually understand what "meaning" is. An urchin may be able to say correctly that a word pointed out to him is an adverb or a pronoun, may proceed to give a definition of either, and examples of in-

stances of its occurrence, and may produce an impression that he understands all this; when the truth is, that he has only learned to make certain noises in a particular order, but is unable to say anything intelligible about the matter in language of his own. He may repeat the multiplication table, and work by it, saying that $7 \times 8 = 56$, without knowing what 56 is, or what 7 times 8 means. He knows all about 7 or 8, not from schooling, but from the lessons of life,—from having had 7 nuts or 8 marbles; but of the 56, which is beyond his experience, he knows nothing. The nature of the mental operations of such children is as little known to the teacher as the nature of the mental operations of the inhabitants of Saturn. Adults distinctly understand a thing which they feel to be very easy, and do not know that any children can talk about it correctly without attaching an idea to their words. They often think the teaching satisfactory which enables the pupils to explain things in set phrases. They do not realize the possibility that the explanation may be as little understood as the statement which it explains. Such, however, are too frequently the actual results.

Reference has been made incidentally to the learned pig, and to the parallelism between its training and some kinds of human education. Persons familiar with the tricks taught to animals are aware that these may all be described as muscular actions, performed each consecutively to its proper signal. On hearing the finger-nails of the master click together, the animal does something in obedience to the sensation,—nods its head, or shakes its head, or stands erect, as the case may be. It has no idea that the nod is an affirmation, or the shake a negation, and probably has no thirst for knowledge about the matter, being content to play its part correctly, and to escape the whip. In the case of children the medium of communication is different, and the kind of response is different, but the faculty in action is commonly the same. The words of the pig's master are mere by-play, intended to amuse the audience, and the signal is conveyed by other sounds. The words of the human teacher, or examiner, his questions, for instance, are the signals to the child, each requiring its appropriate answer;

but, like the signals to the pig, they are aural sensations, capable as such of producing muscular action through the medium of the sensorium alone. The responses of the child are in words; that is to say, in sounds that he has been taught, and that he remembers, but of which he need not understand one iota in order to repeat them, any more than the pig need understand the affirmative or negative character of its nod or shake. In the human species, articulated speech is an act analogous to locomotion, requiring the combined and harmonious working of several muscles, and the guidance of sense, but in no way essentially connected with the intelligence; and the child may make the right noises in right order, just as the pig does not *nod* its head when the signal requires it to be shaken.

The effect of purely sensational learning will be to stimulate the nutrition and increase the vigor of the sensorial tract of the brain, at the expense of neighboring and related organs; the tendency to predominance of the sensorium will be increased absolutely by direct excitation, and relatively by neglect of the intellect and volition. The sensations by which the stimulus has been given will not be long remembered, being superseded by fresh ones arising out of events, as the apparatus of the gymnasium would be superseded by the instruments of actual conflict. With the exception of being, perhaps, able to read with labor and to write with difficulty, the pupils must not be expected, six months after leaving school, to possess any traces of their education, beyond an invigorated sensorium and a stunted intelligence.

Now, when it is remembered that present sensations are the source of the least exalted kinds of animal gratification, and that sensations, either present or remembered or conceived, when combined with a feeling of pleasure or pain, constitute the emotions which so powerfully influence human conduct, it must be admitted that the sensorium is the seat of development of those passions and propensities which society, for its own good, is compelled to keep in check, and which every consideration of right teaches individuals to subdue. When, therefore, we reflect upon the operation of predominant emotions in producing, among other evils, chorea, hysteria, epilepsy, and insanity, or when

we consider the aggregate of misery produced, especially among the less cultivated, by the unbribed indulgence of various appetites, we cannot concur in the propriety of a system of education which has a tendency to raise the source of these emotions and appetites to an undue and unnatural prominence. We meet so many examples of habitual non-reflection in young people, who six months ago were among the most glib and fluent pupils of some sensational school, that we fancy we can recognize a kind of stupidity thus induced, and can distinguish it from anything of the kind that is purely natural. We should be disposed, on the whole, to seek the *rationale* of many educational failures rather in a partial and misdirected training of the intelligence, than in its complete suppression. The pupils mix intellectual and sensational acts, not in their proper relations with each other, but in a jumble. Comprehension is brought to bear upon everything that is easy; while a difficulty of any kind is committed to the safe-keeping of the sense perceptions, and the explanation of it is only remembered. Hence arises a habit of resting upon imperfect knowledge, and a habit of loading the memory by the aid of faulty associations; and these habits, in their turn, are the sources of the lively, superficial stupidity which is so common among the better classes. The sufferers from it form that great public to whom are addressed quack systems of medicine, and elaborately-argued advertisements of bitters and pills. For their especial behoof bubble companies are formed, and upon their weaknesses innumerable impostors thrive. Their deficiency is this: that having been permitted from childhood to do many things superficially and with inexactness, they have forfeited the power of arranging their ideas with precision, or of comparing them with caution. They can, therefore, scarcely be said to possess any assured convictions or rooted principles of conduct.

Towards the carrying out of any improvement in education, the first step must be to demand from teachers, either a knowledge of mental philosophy, or, at least, of a scholastic art founded upon the principles which mental philosophy would inculcate. We believe this demand must inevitably be made in the progress of time; it would be greatly pro-

moted if the medical profession would recognize and strive to impress the distinct bearing of physiology upon the development of the mind, as well as upon that of the body.

The practical difficulties, which it is easy to foresee, all resolve themselves into one. An inquiry after intelligent and intelligible teaching has not yet issued from the public. They are content with something else. Whenever this contentment ceases, the means of supply will spring out of the want; and until then, let individual parents remember that they may accomplish much by encouraging in their children a spirit of curiosity and a habit of comprehension. Whether the fire of intellect shall blaze or smoulder, will depend in many cases upon the manner in which it is kindled; and this kindling is among the things that can be done most effectually under the mild influences of home. The constant appeal to memory and the ignoring of the judgment is paralyzing the intellect of thousands of the young. Under the rattle of their swift talk and the apparent smartness of manner, often assumed, there is a stolid, stupid brain, which the school never awakened into life, or touched.—*Massachusetts Teacher.*

A YEAR ago the Superintendent of the Chicago schools told the teachers that he wished them to see what could be done without corporal punishment. The majority assented cheerfully, giving up all punishment except the power to write a note of suspension, and to send an ungovernable child to the Superintendent. During the year 611 pupils were suspended, but of these, 366 were restored and remained ordinarily obedient. The Chicago teachers are greatly elated with their success, but what becomes of the 245 children who are permanently suspended? They should not be turned out to grow up in the streets so long as there is a hope of saving them. Their presence in the school is undoubtedly a detriment, for they not only hinder the progress of the others in their studies, but their example is bad. To meet these cases the Superintendent proposes the establishment of a central ungraded school, which shall be in the nature of a reform school, to which all the hard cases shall be sent.

GEOGRAPHICAL NOTES.

UNITED STATES.—The survey of the middle link of the line of the Northern Pacific Railroad—namely, from Musselshell River to the Missouri—was supported by a U. S. expedition under Col. D. S. Stanley, which left Fort Rice, on the Missouri River in Dakota, June 20. July 9 the command reached the head of Davis Creek, running through the Mauvais Terres (Bad Lands) into the Little Missouri. These lands were the most striking feature of the entire route. According to a correspondent of the *Tribune*:

“This peculiar character of the country in the North-West is found at intervals in a belt perhaps 600 miles long from north to south, and 200 miles east and west, flanking the valleys of the large rivers and creeks. It is found in the western part of Dakota in extensive tracks running up and down the Little Missouri, the Upper Missouri, the Glendive, and the Yellowstone. It occurs on some of the forks of the Platte. It borders the Black Hills and extends through South-Eastern Montana and Northern Wyoming. These lands are monuments of the wonderful power of water. Any one who has been to California and seen the effect of hydraulic mining in the hills, washing away, cutting deep gulches through their sides, and pouring the loose earth into the valleys, may form some idea of the Bad Lands on a small scale. In the Eastern States there are no topographical phenomena which can form the basis of a correct comparison. The effect of a heavy flood of rain, which has plowed through a region of yielding sand or clay hills, carving and fluting their sides from brow to base, cutting miniature streams and gulches and transporting hundreds of tons of clay and sand into adjacent streams, may suggest something of the physical appearance of an acre of the Bad Lands and the mechanical energy that has wrought it. Multiply this one acre by thousands of acres; instead of one hill have a myriad, stretched over miles of the country, broken and intersected in every direction by numerous troughs, ravines and serpentine stream-beds, the hills bare of vegetation, rounded into cones or sugar-loaves, or cut into grotesque and indescribable shapes, looking in the distance like the broken ruins of an aboriginal city. Imagine this torn, eroded, water-worn, sandy complication of bastions, peaks, hill-cones, 50 to 450 feet high, in the midst of this maze of dry ravine, and you may succeed in forming a notion of the ‘Bad Lands.’”

The writer adds, however, that “one palliating feature of these almost irredeemable lands is the presence of wood and

of water also, such as it is;" and another correspondent, viewing the same scene with a somewhat different vision, is at a loss to know why these lands were ever stigmatized as "bad." July 15 the expedition reached the Yellowstone, and crossed it at Fort Pearson, whence a detour was made west and south to a point below the mouth of Powder River, first reached by boat this spring by Gen. Forsyth, no other navigator having ventured up the Yellowstone since Lewis and Clark at the beginning of the present century. Its average width is 1200 feet, its rate about six miles an hour. The banks are low, receding, clayey, relieved only from their yellow monotony by intervals of green meadow-shelves.

—Mr. Thomas Foster, who writes from the "Historiographer's Desk, Indian Office, Department of the Interior," has undertaken to settle the true pronunciation of *Arkansas*. It is gratifying to be able to state that he upholds *Ar-kan-saw'*, fortifying himself not only by the best usage but by reference to the spelling of the name in the early French chronicles, where of course the pronunciation could not be doubtful. The *Akensas* were a tribe living north of the Natchez, and Father Le Petit, who first mentions them with this spelling, afterwards speaks of "one *Akensas*"—so that the final *s*, is a true plural ending. In 1758 another Frenchman uses our present orthography, speaking of the *Arkansas* River, and of "*the Arkansas*" in the same sentence with other plural names of tribes. Mr. Foster urges that a legislative sanction be given to the right pronunciation.

EUROPE.—The British navy will probably long maintain his superiority to every other laborer on the face of the earth, in respect of his efficiency at least in the use of the shovel. Mr. Henry Blackburn, in his latest agreeable souvenir of travel, called the "Harz Mountains," thus illustrates this truth in contrast with German labor:

"There was a curious scene, one afternoon in the summer of 1872, at the entrance to the Frankenberg slate quarry, where Welsh quarrymen were introducing the British spade for the first time to the German workmen. It was a rude shock, especially to the older men, to be compelled to discard the implements they had used for half a lifetime; but the saving of time and labor with the new tools was so

obvious that in a short time they were reconciled, and were to be seen, both men and women, in different parts of the quarry, working with spades held left-handed, with both hands as far as possible from the blade. The old system of quarrying in this district is worth noting, as it will soon be matter of history. When a workman had to excavate in ground, either hard or soft, close or loose, he first went to work with a single-pointed 'pick,' then scraped the loosened earth together with a half-moon-shaped hoe into a wooden platter about 18 inches long; he then threw down the hoe, and with both hands lifted the earth into a little barrow, and sat down to smoke while his daughter wheeled it away. Whenever anything like a spade was used it consisted of a long curved-handled implement, with oval-shaped blade about the size of a dessert plate. This the workman used left-handed, with as much waste of power and as little result as possible. Thus with grievous waste and mismanagement, want of enterprise, and also, it would appear, want of capital, the treasures in slate in this part of Germany are practically undeveloped, whilst the builders of Berlin and other cities of Germany send to Wales for their supplies."

ASIA.—The Cesnola collection of antiquities from Cyprus has revived the interest always felt for this romantic island. Dr. Paul Schröder, of the German legation at Constantinople, as early as the spring of 1870, made archæological and geographical excursions in Cyprus, and has repeated them during March and April of the present year, venturing into parts still more unknown, particularly the mountainous region in the north-west, called Tylliria, where no European had preceded him. He found the isolated inhabitants of this section speaking a language which retained many words from the ancient Greek, unintelligible to the modern Grecians, and exhibiting an astonishing primitiveness in their mode of life. Holes in the earth or rock serve for houses; the bare earth for a couch; tables and beds are unknown; the covering of both sexes is a coarse canvas, stiff with dirt; and barley bread is almost their sole diet. Neither wine nor coffee have they. Six rainless winters have converted the greater portion of the interior of the island into a desert, and an irresistible emigration is going on towards Syria and Asia Minor; so that an island which, three centuries ago, under Venetian rule blossomed like the rose, is now in imminent danger of becoming depopulated.

—Dr. Schliemann's excavations on the site of ancient

Troy have continued without intermission since February 1, when they were renewed with a force of 150 men, with the very considerable addition of his wife—an Athenian woman, equally enthusiastic in the pursuit of the vestiges of Priam and his subjects, and the conquering Greeks. In July, a very remarkable “find” was made, which Frau Schliemann dexterously concealed from the view of the laborers by covering them with the folds of her shawl. It consisted of shields, kettles, salvers, [vases, flasks, goblets, lance-heads, etc., appropriately manufactured of bronze, gold, or silver, and all curious for their art. Dr. Schliemann makes no doubt that he has hit upon a treasure from the palace of Priam, which he locates near by; and as the articles enumerated were overlaid by molten metal, ashes, etc., he feels sure that the chest containing them was dropped in the flight from the burning city. He finds Homeric mention for almost every article secured, and walks as confidently through the underground labyrinth as if Poseidon himself or Aphrodite were his guide. Archæologists look with interest on his labors and the relics which he unearths, but seem to reserve their opinion as to his topographical and historical conjectures.

—The great event of the times in political geography has been the capture of Khiva, and the consequent unopposed extension of the Russian empire to (practically) the whole Chinese frontier. The military preparations of the Russians were ample for the end proposed, and the Khan yielded to overpowering necessity. Human slavery in a broad region is now among the things of the past. In the meantime Yakoob Beg has died during an embassy to the Russian capital.

AFRICA.—Sir Samuel Baker, on his way back to England, after having extended the Egyptian frontier to the equator, and left eleven steamers on the White Nile to watch the slavers, addressed a letter to Sir Henry Rawlinson from Khartum, July 2. In the course of it he says:

“The news of Livingstone’s safety received here is most cheering, but I am astonished at his account of an examination of the north end of Tanganyika, that there does not appear to be any connection

with the Albert Nyanza. Since I wrote to Sir Roderick, the King of Uganda M'tese, to whom I had intrusted the search for Livingstone, sent messengers to me at Fatiko saying that his men had been to Ujiji, and declared that Livingstone had left that place long ago for the west side of Tanganyika, since which nothing was known of him. They also reported that three white men had been to Ujiji, but had returned. I sent one of my men with M'tese's envoys to remain with him as my agent. This man (Selim) was one of Speke's "faithfuls," who, having got drunk in Alexandria, was seized by the police and made a soldier; thus his destiny brought him into my service. I wrote a letter to Livingstone, which will certainly reach him if he comes north, and the King of Uganda will receive him kindly and forward him to the Government station. I established a station opposite Riouga's Island on the Victoria Nile, N. lat. 2.06. My next station is Fatiko—N. lat. 3.01—at which places he will feel himself at home should he reach them.

"The envoys sent by M'tese all assured me that the Tanganyika is the M'woatan N'zize (Albert Nyanza), and that Ujiji is on the eastern border; that you can travel by boat from Ujiji to the north end of the Albert Lake, but you must have a guide, as some portions are very narrow and intricate. From my experience of the high-water grass, I should expect islands and floating vegetation in the narrow passes described. I am by no means fond of geographical theories, but the natives' descriptions were so clear that I accepted as a fact that the Tanganyika and Albert Lakes are one sheet of water, with marshy narrow straits overgrown with water-grass, through which you require a guide."

If this opinion prove true, it will be not the least among the marvels of Central African discovery. It is singular, however, that a connection which is known at "the north end of Albert Lake" should not be notorious at Ujiji, and that Stanley and Livingstone should be left to hunt for the outlet or strait without assistance. The story that three white men had visited Ujiji and returned, answers to Stanley and his two white lieutenants, except that the latter never reached the lake.

—The Libyan desert lying next to Egypt has never been explored in its interior. Herr Rohlfs, having obtained of the Viceroy substantial support (£4,000), will lead thither an expedition, embracing an astronomer, a geologist, and a botanist, in December next. The desert will be entered from the Egyptian side.

—MM. Marche and Compiègne arrived at Gaboon on

the 15th of February, with intent in the course of some months to ascend the little known river Ogowai, which, with the Congo and the Shari, flows through the largest portion of Africa which has remained unexplored. They are men of scientific attainments, and accustomed to hot climates.

Bibliography.—M. Vivien St. Martin, the accomplished editor of *L'Année Géographique*, will publish in the course of the present year a Universal Dictionary of Modern Geography, with an accompanying atlas and history of geography.

—Dr. W. Koner's annual review of geographical publications of every description occupies nearly 100 pages of No. 42 of the *Journal* of the Berlin Geographical Society. It is universal in its scope, between the dates December, 1871–November, 1872.

—Messrs. Sampson Low and Marston are about to publish a volume on the subject of Arctic Exploration, by Mr. Clements Markham, editor of *Ocean Highways*, entitled the "Threshold of the Unknown Region." It is intended to give a full account of all that is known of the line which, at present, separates the known from the unknown; to explain the best route by which the unexplored region may be examined; and to enumerate the important scientific results to be derived from Arctic exploration.—*Nature*, June 12.

—It may be recollected, says *Nature* (June 5), that M. Alphonse Pinart, the French philologist, visited the Aleutian Islands and Alaska in the summer of 1871, for the purpose of collecting the vocabularies and the photographs of the different tribes. This material he carried back with him to Paris, where he has been engaged in working it up. We learn that he expects to revisit the United States this month, with ample funds in his hands from the French government, in order to effect an exhaustive collection of the antiquities of Alaska, his excursions to different islands being made in a vessel especially fitted up for his use. Alaska is one of the finest fields in the world for ethnological and prehistoric research.

—Dr. Petermann, in *Mittheilungen* of May 8, has some wholesome words for American skeptics on the subject of the Stanley-Livingstone meeting. The number of intelligent persons in this country who believe Stanley's story to be pure fiction is much greater than would be imagined by those who have paid attention to the evidence. Dr. Petermann says that there are no longer any doubters in Germany, and that long ago experts had to admit that Stanley did really make the journey to Lake Tanganyika and there meet Livingstone. He adds, what is very true, that Stanley's diary has the dullness of an honest recital (*machen eher einen langweilig ermüdenden Eindruck als einen schwindelhaften*), and the prompt composition of the book must have required scarcely less energy than the journey itself.

Cartography.—A good-sized map of Santo Domingo accompanies the August Circular Letter pamphlet of the Secretary of the Samaná Bay Company (New York.) The "Domain" of this Company is duly indicated by a red boundary, and in one corner of the map a plan of the future metropolis of the bay is given. Dr. Nachtigal's sketch-map of his explorations in north-eastern Soudan is represented in No. 44 of the *Journal* of the Berlin Geographical Society (New York: L. W. Schmidt). The same number also contains, on two sheets, no less than fourteen comparative maps of Africa, from the second century of our era to the present day. The first eight are: Ptolemy's (Alexandria, about 130 A. D.); Marin Sanudo's (Venice, 1321); Picingani's (Venice, 1367); Andrea Bianco's (Venice, 1436); Fra Mauro's (Venice, 1457); Martin von Behaim's (Nürnberg, 1492); Diego Ribera's (Seville, 1529); O. Dapper's (Amsterdam, 1676.) The last three maps—the last two especially—approximate the Africa known to us at this date. With D'Anville's (1749) begins, says Herr Kiepert, the scientific cartography of the continent; and beside it he places five maps showing, on the same scale, the progress of discovery in inner Africa at as many different periods, marking in red the courses of German explorers. These maps well deserve a place in every school library. We may note that the last in order (1860–1873) shows three blank spaces yet to be explored: (1) the Libyan desert, which Herr Rohlf's will essay this winter; (2) a small district lying north of the Guinea coast; and (3) the middle Congo region, which Livingstone, the Germans, two or three British expeditions, and one French are attempting to penetrate. Petermann's *Mittheilungen* for May 26 has maps of the Northern Moluccas, and of the German Empire and adjacent countries (with special reference to railroad and steamboat lines). The same periodical for June 25 shows the course of the steamer *Albert* in Spitzbergen waters, in 1872, and on one sheet the province of Kuang Tung, China, and Canton and its vicinity.

—Mr. James Wyld, of London, is a map-maker of whose productions purchasers and students would do well to beware. Last year he put forth a large map of South America whose history is exposed by Herr Kiepert in No. 42 of the Berlin Geographical Society's *Journal*. We cannot repeat the details; enough to say that the map was originally the work of a French refugee, Louis Stanislas d'Arcy de la Rochette, and appears to have been drawn in 1790 but first issued in 1820, at the time of the revolt of the Spanish-American colonies, by William Faden, predecessor of Mr. Wyld. A fourth (unrevised) edition appeared in 1823. With a few slight changes, very bunglingly made, the same plate is made to do duty again in 1872 by Mr. Wyld, in utter disregard of the enormous geographical acquisitions of the past 80 years; is called a new and corrected edition; and is sold for \$20! Herr Kiepert has carefully compared the editions of 1823 and 1872, and knows whereof he speaks. Nor is this Mr. Wyld's only of-

fence. Eager to turn the public interest to his profit, he has (apropos of the Khiva expedition and Stanley's journey to Livingstone) issued the most antiquated maps of Central Asia and Central Africa, which show on their face that the sources from which they were derived must be from twenty to fifty years old !

Photography.—It makes no difference how we enter Quebec with the Messrs. Anthony for *ciceroni*. The sentry at the citadel has no terrors for the tourist who takes 591 Broadway for his base of departure. But there is no reason for being singular. Most Americans approach Quebec from the St. Lawrence side ; let us do the same. The first road to the Upper city from the Lower is Mountain Hill Street. We have it, steep and curving, in No. 8246. The view is from just below the Prescott Gate, or rather the site of the gate, for the arch has been taken down here as at every other entrance (save one) to the once fortified city, though, as we shall see, some of these views were taken before the last act of demolition had been consummated. In the view before us we have to note the interrupted rampart on the right, the roof of the new post-office at the head of the street, and an old house with a characteristic gable, clapboarded from the eaves to the very tops of the chimneys and across the space separating them. No. 8229 shows in front view the south side of the same street, from a point directly above the line of Prescott Gate. Here we have our first introduction to the tinned roofs which form so marked and peculiar a feature of Quebec (city and province). Above and beyond is Durham Terrace, the grand resort for sight-seers, on which we shall presently take our stand ; and, still further off, the Citadel, with its precipitous angle of descent to the St. Lawrence, whose waters are here just visible. Looking down from the Terrace, on our left hand, we get such a view as No. 8225—the Custom-house, with tinned dome, occupying the central foreground, and the great river stretching away to the north-east ; its right bank and the shore of Orleans Island being both in sight. Curious roofs, on which we see the universal fire-ladder (at first supposed by the stranger to have something to do with smoky chimneys or with Santa Claus) ; the long jetty called the Commissioners' wharf ; and much shipping, make this a very interesting view. More of the roofs of the Lower town, another stretch of river, and Point Levi (the railroad terminus of Quebec) are present in No. 8228. Best of all views of the Lower town, with a good view of the river and of the Point Levi shore we get in No. 8227. Immediately below us (our standpoint is Laval University) are the gun-mounted ramparts ; at a pier we see a Montreal or Saguenay boat ; and in the stream one of the Allan line of ocean steamers. We must leave the Terrace to get our best view of the St. Charles River and that portion of the suburbs of Quebec. From another jumble of roofs the eye crosses the river to the indescribably charming champaign beyond—towards Lorette and Beauport and Montmorenci, and the encircling hills far away (No. 8226). Through

this fertile tract one rides along an endless street to the Falls of Montmorenci. In No. 8237 we have perhaps the best possible view of the falls, inasmuch as the mud-bank below here passes for rock, and the beholder does not realize, as on the spot, the bare and shadeless surroundings, and the prosaic end of so magnificent a descent. The house of the Duke of Kent, and the towers of the ruined suspension-bridge above the falls, are plainly to be seen. A few months ago we could have re-entered the city by the Palace Gate. It exists no longer except in memorials like No. 8247. Another gate which is now but a name is Hope Gate (from without, No. 8249; from within, No. 8248). The former gives an excellent idea of the fortifications. Among public buildings the two centuries-old French Cathedral claims attention (No. 8239, exterior, showing the tinned spire; Nos. 8240, 8241 the interior.) It is a staid edifice, but the interior decoration has the merit of not being repugnant to the taste of a Protestant. Outside we notice the indigenous two-wheeled vehicle called the *calashe*, of which we get a special view in No. 8250. It is picturesque but rough to ride in, and perhaps a little vulgar; but it is well adapted to the steep streets. We may take in St. Louis Castle (No. 8234) on our way to the gray Wolfe and Montcalm obelisk in the pleasant garden overlooking the river (No. 8244). A nearer memorial of Montcalm is his headquarters (No. 8235) just opposite the St. Louis Hotel on St. Louis Avenue. It is in all respects (whether as a relic or as a modern barber's shop) less interesting than the residence of Montcalm pointed out on the Montmorenci road. A little further up the avenue we come to the one-story house in which Gen. Montgomery's body was laid out after his death on the last day of 1775 (No. 8236); and walking on for no great distance we pass under the (once) St. Louis gate, and emerge upon the Plains of Abraham, and presently stand at the base of the column erected on the spot where Wolfe fell (No. 8245). The surroundings are very shabby, and a new penitentiary is unpleasantly near. Some day Quebec should honor itself by laying out here a public park. Climbing down the perilous height which Montgomery tried in vain to scale, we pass along one of the most dirty, old, and thoroughly interesting streets (Champlain) in the whole town. From one of the wharves we take a farewell glimpse of the frowning Citadel (No. 8233), stared at by three little girls perched peacefully before us on upturned crates.

These photographs give you substantially all that the actual visitor to Quebec sees who devotes his day or day and a half to sight-seeing. But it will be well not to imagine that they are anything more than an imperfect substitute for a real visit, or that thirty-six hours are sufficient even for that. There are little details of street lines, sky lines, odd construction, strange contrivances—a gable, a lamp-bracket, a casement—which invite open-mouthed gazing on the spot, and would repay quiet contemplation in the stereoscope if only they were so pictured for us.

THE ANDERSON SCHOOL OF NATURAL HISTORY.

THE island of Penikese embraces about 100 acres; ten of these constituting a northern peninsula, reserved by the donor as a future building spot. The rest forms an irregular circle; the northern shore rises gradually, the southern one is precipitous; and near the southern border is "Flagstaff Hill," about 100 feet above the sea. This island, like the neighboring Cuttyhunk, Nashawena, and Naushon, which, with smaller ones, constitute the Elizabeth group, is drift plentifully sprinkled with boulders representing nearly all kinds of rocks, amongst these a splendid specimen of conglomerate or "pudding-stone."

The buildings given by Mr. Anderson stand near the water, upon the southwest shore of the little bay between "Great" and "Little Penikese." The house faces the south, and has been occupied by the instructors with their families; a projecting ell accommodates the servants. The proposed buildings were two, each 100 feet by 25, running parallel, east and west, and connected by a lecture-room 25 by 40 feet; all these are now completed; but upon the 5th of July, when Professor Agassiz reached the island, the utmost efforts of the architect and builders had only succeeded in roofing in the more southerly of the two buildings. Yet on Tuesday, the 8th, at least fifty persons would arrive for permanent occupation, and others to witness the opening exercises. How the carpenters worked all Sunday, upon the ground that the Anderson School was no money speculation, but an institution for teaching God's truth: how Mrs. Agassiz and other ladies not only directed the willing laborers of the employees, but themselves unpacked crockery and furniture and made the beds, so that by Tuesday noon the south building was floored, and the furniture arranged at the east end for the ladies and the west end for the gentlemen, need not be described in detail; nor how the steward and his assistants provided then and thereafter the equally essential materials for the subsistence of the 70 to 80 persons who occupied an island fifteen miles from New Bedford. Suffice it to say that this was accomplished

at a cost of \$8 40 per week for each student, with an additional charge of \$10 for the use of furniture during the summer. These figures are given to show at what expense living and instruction were furnished the first year, when all was new and necessarily more costly than it is likely to be hereafter. Within a fortnight, the eighteen women students had each a room upon the second floor of the south hall; the remaining rooms were occupied by as many men, and by such of the instructors as could not be accommodated in the house; the remaining male students occupied the western third of the lower floor, the other two-thirds forming the general laboratory and lecture-room. It will be understood that next year each of the fifty students will have a sleeping-room on the second and a working-room on the first floor.

Communication with New Bedford was had almost daily either by sloops chartered by the institution, by the *Sprite*, of which hereafter, or the steamer which visited Cuttyhunk twice a week. The burden of business was assumed by a friend of Professor Agassiz's, and an account was kept with each student in respect to board and the alcohol and other supplies required for their private collections. Fifty aquariums, each 30 inches long by 20 inches wide and deep, had been ordered as early in the spring as plans could be made. The frames and glass arrived during the first week; but, in spite of the exertions of all concerned, they were not fully completed before the close of the school, and so one great feature of seaside instruction was wanting. Yet not entirely either; for bowls, pails, and jars were in constant use as small aquariums, and so much was learned and enjoyed even from these simple contrivances, and so fully was the time occupied, that more than once it was said that the aquariums would this first year have been almost an *embarras de richesses*.

The materials for aquarium study and for dissection were obtained in part by the students themselves, wading over the flats or in excursions to and among the neighboring islands, and in part by the almost daily dredging from the *Sprite*. This is a beautiful yacht of about forty tons, presented to Prof. Agassiz by Mr. Galloupe, and under the charge of

Count Pourtalès, of the Coast Survey, whose deep-sea investigations during the past ten years have not only changed our views of life at great depth, but suggested similar researches upon the other side of the Atlantic. The dredging party consisted of eight ladies and gentlemen, and always brought in valuable material, although the limits within which it was thought best to confine the excursions precluded the results obtainable in deeper waters. A neighboring "pound" afforded a constant supply of the sharks and skates which were needed both for instruction and for the prosecution of researches which Prof. Agassiz has been for many years carrying on respecting selachians. Very valuable acquisitions were also made through the fishermen of New Bedford and vicinity. From these various sources came, among radiates, plenty of star-fishes and holothurians (or sea-cucumbers), also sea-anemones and corals enough to give all an opportunity to study them. Sea-urchins (*echini*) were not found, but a supply arrived from Prof. Baird, at Peak's Island, near Portland, Maine. Of mollusks, the island shores afforded the *litorinas* in plenty, and larger univalves as well as bivalves were found by wading, or brought up by the dredge. Of the cuttle-fish, only a few squids were found. Articulates were obtained in great abundance; the gigantic and tufted marine worms were a revelation to those from the interior, whose knowledge of this class was confined to earth-worms. Sand-fleas and little shrimp-like crustaceans abounded upon the flats and among the sea-weed, while the large crabs and lobsters were occasionally procured in quantity for general examination. An almost treeless island would not be expected to furnish many insects, yet representatives of all the sub-orders were found; garden-spiders and house-flies abounded, the latter multiplying to a troublesome degree toward the end of the summer.

Naturally, the marine vertebrates occupied most attention. Fishes of several kinds were sometimes had in large number, so as to be examined by all; or the rarer species were prepared as permanent specimens, either by the students or by those who collected for the Museum at Cambridge, of which the Anderson School is practically a summer branch. And here it should be stated that so far from

laying claim to what was obtained, Prof. Agassiz urged the students to make collections to take home, and provided for the purpose cans and alcohol at cost. The only exception was in the case of a skate brought in by a dredging party, which proved to contain in each oviduct an egg in its case or shell, apparently just formed and ready to be laid; and the finder gladly placed at the Professor's disposal a specimen of which he could make the best use. Among other prizes were the sharks with eggs bearing young in different stages of growth (for many sharks bring forth living young), and a skate five feet across, with a tail of still greater length, and so heavy as to require two men to carry it into the laboratory; a "file-fish" (*monacanthus*), several "globe-fishes" (*diodon* and *tetrodon*), two specimens of *tetrapterurus* allied to the sword-fish, an *elacate*, and three species of *echineis*. A few pipe-fishes were found, but no lampreys or sturgeons; but some specimens of *amphioxus* and lampreys, gar-pike, and other ganoids, had been brought by Prof. Wilder to illustrate the lectures.

The batrachians were plentifully represented by hosts of toads, which are said to have been introduced only five years ago, but now cover the island, making holes two to five inches deep, apparently for protection against the salt spray, and eating little crustaceans (*gammarus*) as well as insects. No reptiles were found upon the island, but a number of turtle have been introduced as a supply in future years. Several kinds of birds were obtained, but the most abundant were three species of tern, whose eggs and young were in some localities not easy to avoid treading upon. None of these were killed for sport, and the means for embryological study will therefore continue. The sheep constituted the sole mammalian inhabitants, until the arrival of the rabbits and guinea-pigs sent by Dr. Brown-Séquard. Notwithstanding the unpromising aspect of the island from a botanical point of view, one of the students made a list of about seventy-five plants; the sea-weeds were objects of great interest, and beautiful specimens were prepared. Fossils were obtained at Martha's Vineyard; but Penikese afforded no geological material beyond the drift and boulders already mentioned.

The means of study at Penikese consisted of dissecting instruments supplied at cost, and of trays, jars, dishes, etc., which all were free to use. Several students had microscopes, and the institution supplied nearly a dozen of different kinds, which were constantly in use. A stereopticon furnished several instructive exhibitions. The instructors brought works upon their special subjects, and the students soon learned that Professor Agassiz's denunciation of books referred mainly to compilations and text-books; while even in respect to them, it could be fairly interpreted as was the Scriptural declaration against rich men; and all soon learned that only those who trusted too much in books were likely to be excluded from the ranks of true naturalists. The key-note was given when Professor Agassiz, in his opening address, stated that he was less anxious to impart actual information than to lead the students to observe for themselves, and to become as far as possible original investigators; and that, if they could learn the best *methods of study*, the results would be sure.

It was evident that the applications for admission would far exceed the number (fifty) which could be received; and Professor Agassiz established a rule which is to be even more rigidly adhered to hereafter, namely, to admit only those actually engaged in teaching natural history. The admission of women could hardly form a question with one who, though not a believer in coeducation in general, has always received them both as students and assistants in the Museum; and the earnestness, industry, and skill with which they avail themselves of all the privileges at their disposal, proved the justice of their admission. The students, most of whom were themselves teachers, even superintendents of schools, all worked with great zeal both in taking notes and in dissection; indeed, all needed cautioning more than urging. Not content with their regular work, they organized an Agassiz Natural History Club, whose weekly meetings proved of great interest.

It will be remembered that the first announcement of the school included the names of about twenty scientists who had made specialties of the various branches in which instruction was to be given; and it is one of the pleasantest

features of the whole affair, that although, almost without exception, hard-worked in their regular duties, these gentlemen volunteered their services. From various causes, enforced absence, other duties, and in several cases the need of absolute rest, many of these free-will promises could not be fulfilled; but their offers themselves remain on record as evidence of their wish to assist in an effort to advance natural-history education, and of their faith in the leader of the enterprise. Instruction was actually given by the following: 1. Louis Agassiz, Harvard University. 2. Arnold Guyot, Princeton College. 3. Count Pourtalès, Coast Survey. 4. A. S. Packard, Peabody Academy, Salem, Mass. 5. B. G. Wilder, Cornell University. 6. T. I. F. Brewer, Boston. 7. Waterhouse Hawkins, England. 8. Edward Bicknell, Cambridge. 9. Paulus Roetter, Cambridge. Professor N. S. Shaler, to whom the school is so largely indebted for its existence, and Dr. Brown-Séquard were detained in Europe till too late to join their colleagues.

Mr. Roetter gave several practical outdoor lessons in drawing from nature, and Mr. Hawkins delivered three lectures upon the principles of art and the method of natural-history drawing. He also illustrated two of Dr. Wilder's anatomical lectures upon the board; but most of his and Mr. Roetter's time was spent in transferring to paper the aspects in life and action of the new and interesting animals constantly brought in. Mr. Bicknell gave constant instruction in microscopic manipulation, and prepared specimens for the microscope or by injection for various investigations; he also on several occasions employed the stereopticon for illustration of microscopic structure and even of living animals while moving and devouring each other. Dr. Brewer delivered three lectures upon birds, the first of which was a most instructive demonstration of their usefulness as insect devourers, and a vigorous protest against their destruction. All hoped that his radical views would be published and heeded. Count Pourtalès superintended the dredging, and gave instruction in the use of the various instruments required for observation upon land and sea. It must not be forgotten that a timely storm delayed Professor Peirce, the eminent chief of the Coast Survey, sufficiently

long upon the island to enable the school to hear his views upon the nebular theory. Prof. Guyot, the former fellow-student and always warmly-attached friend of Prof. Agassiz, was able to remain only a week, but he lectured nearly every day, and succeeded in imparting an amount of information upon physical geography and meteorology which, as is well known, could not have been obtained from any other source.

Dr. Packard and Dr. Wilder took charge of the instruction upon articulates and vertebrates respectively, and were at all times in the laboratory superintending the students' dissections, pursuing their own investigations, or preparing for their lectures, which generally came upon alternate days. Dr. Packard began with the lower forms of life, and then followed a regular course with the worms and crustacea, illustrating them with diagrams, or, when possible, with actual specimens. A most interesting and instructive account was given of the structure and embryology of the horseshoe crab (*limulus*), mainly from his own researches. The closing lectures were on the general structure and metamorphoses of insects, but there was not time for a detailed account of the sub-orders; the students were advised to form "biological collections" to illustrate the life-history, the foes and friends and food of single species, as a most interesting study and an aid to agriculture. After some preliminary lectures upon methods of study, upon the habits of spiders, and upon general anatomy and physiology, including a demonstration of the viscera and muscles of a large dog, Dr. Wilder began with *amphioxus*, and treated successively the several groups, the last lectures being upon the brains of mammalia, and especially of dogs; all were illustrated by diagrams and by specimens.

Prof. Agassiz himself worked, as he always does, hard and almost uninterruptedly; in fact, too hard for his health. He was almost constantly in the laboratory, encouraging and aiding alike the students and the other teachers, or spending hours in elucidating new points in the structure of animals which he has studied all his life; and he lectured nearly every day, at times even twice in a day, for he attended every lecture by others, and at its close, or even in

its course, would rise to add a word of confirmation or doubt, and, as upon several occasions, would continue for half an hour upon matters suggested by the lecture. On one occasion, some general remarks before a lecture led to a spirited discussion upon some important subjects, to the exclusion of the lecture itself, but to the greater satisfaction of all concerned. In fact, nothing could be less formal and more genial than the intercourse between the respected chief and all connected with the school. From what has been said, it will be seen that an enumeration of Agassiz's subjects would not be easy. A series of admirable lectures on glaciers, embodying much that has never been published, and a course upon radiates, and a third upon the egg, formed nuclei around which were grouped discourses upon general topics and special questions, such as were never before brought within the same time. And when it is remembered that the school opened July 8, and the last student departed August 28, and that during these seven weeks Prof. Agassiz was absent less than one (and that upon urgent business), it will be evident that when he asked the co-operation of others he did not mean to content himself with directing their labors; but it is to be hoped that another year he may be willing to give himself more of the rest he so sadly needs.—*Nation*.

CREAM OF THE EDUCATIONAL MONTHLIES.

A WRITER in the *Connecticut School Journal* discourses upon School Government, and the failure of some teachers to preserve order. Those who do succeed possess "a power of authority which is irresistible—a natural gift"—or they have tact, or an unconscious, but strong, influence over others. To those not endowed with these qualities, and they are the large majority, the cultivation of the will is commended, and unvarying courtesy towards pupils. These suggestions are good but are not sufficient. The teacher must decide questions of discipline calmly, and then insist upon obedience. If a wrong decision is made, however, he should promptly reverse it. Another import-

ant point is to keep cool. The moment self-control is lost, control over pupils is gone. More is gained by courtesy in school than is generally supposed. If you treat a boy like a gentleman, you give him a strong incentive to become a gentleman. Therefore we would insist strongly upon this point. Among the other articles in this magazine we note "Teachers' Wages, Professional Training, Adverb or Adjective? and Literary Culture for Children." This number of the *Journal* is unusually good, the book-notices being omitted for want of space.

The August and September numbers of the *Minnesota Teacher* contain a paper on Normal Schools and Model Schools. The writer distinguishes two systems employed in normal schools, "the academic," aiming to give the greatest possible amount of culture, and "the professional," aiming to make professional teachers. As is justly said the grand requisite for the teacher is knowledge, but without the ability of imparting it the greatest amount of learning is useless so far as teaching is concerned. These two must both be found in the successful teacher. Applicants for admission to normal schools have generally little education, and the time allowed them to study is so short, that they think they must devote it all to the acquisition of knowledge. It is however necessary for them to learn "how to teach," and if the theory of teaching does not suffice we see no escape from the practice to be acquired in the model school. The idea of the model school is undoubtedly correct. If in the present state of culture among normal school pupils it is advisable to employ it, is another question. The other articles contained in the *Teacher* are selected.

Rhode Island Schoolmaster.—Contents: Horace Mann and George Peabody, The Bible in School, My first School, Cooperation of Parents, Educational Intelligence, etc. "The Bible in School" gives the views of a writer who formerly was strongly in favor of reading the Scriptures in school, but who has modified his opinions somewhat. He argues that since many patrons of the school object to it on the ground that it teaches sectarianism, we have no right to do it. He would however teach morality, for, without that as a foundation, education has not its full elevating power, it would

not restrain from crime. For this the Bible is not absolutely necessary. A moral life in the teacher will have the strongest influence upon the pupils. Neither Romanists nor Atheists, though they might object, the one to our Bible, and the other to any Bible, would oppose the teaching of decency, chastity, benevolence, or any other of the practical christian virtues. This would be all well enough could we always get teachers whose christian lives were an example worthy of imitation. The teaching of morality is essential, and we must see to it that all our schools enjoy it. To trust alone to the influence of teachers would not be wise.

President E. S. Joynes's address at the opening of the Educational Association of Virginia, and a paper on The Use of Text-books, are the leading articles in the *Educational Journal of Virginia*. The address is excellent. The other article discusses the uses and abuses of text-books. Two methods of using the book are noted; 1st, teaching orally and referring to the book for confirmation; and 2d, having the lesson learned from the book and adding whatever is necessary after the recitation. The latter system has the advantage of thoroughness, and it disciplines the mind. This is more beneficial than the mere acquisition of facts. Several abuses of text-books are mentioned, of which the most important is relying implicitly upon the statements of books. Pupils should be led to sift every question, and, if their conclusions do not agree with those of the book, to think the matter out, and, with the help of the teacher, decide which is right. The writer in his search for abuses has discovered one of which we never dreamed. It consists in "putting a text-book into the hands of pupils who cannot read them, and requiring lessons to be committed to memory from them. Cases have been known where children who had not yet learned the alphabet were required to study their lessons in the text-book!!!" Two of the last exclamation points are ours,—one could not do justice to an abuse of such magnitude. It is as sensible as requiring a man to lift himself over the fence by his boot-straps.

CORRESPONDENCE.

A FUNNY CRITIC.

MR. EDITOR:—W. Hand Browne has freed his mind. In the MONTHLY for September, he has levelled at us three full pages of large words, (some of them enormous, jaw-breaking concerns!) on account of our brief notice of his friend Holmes's little book. The blow was tremendous and stunning. But we find we were not very seriously hurt; we still eat, with excellent appetite, our three meals a day.

The points Mr. Browne endeavors to make against us seem to be nine in number—just the right number for a cat-o'-nine-tails!

He charges us, in the first place, very mysteriously with having put forth "a distemper." He says: "His criticism is evidently not an art, but a distemper." A very suggestive use of words! We are very happy, however, to be informed that a criticism is a distemper. And this distemper is supposed "to be very severe." If such is the case, we confess our previous ignorance of the fact.

Mr. Browne tries to be funny over the idea that, in works on geometry and surveying, cuts and diagrams are mere illustrations. This simply shows his ignorance of facts. He probably has never heard of geometry without diagrams. When he is wiser and perhaps has some better idea of what an abstract science is, he will be less disposed to be funny over "illustrated geometries."

He says that "the absurdity that acidulates" our "blood, is that a grammar should have pictures in it." He was never more mistaken. Neither has our blood been acidulated over his friend's grammar, nor have we the least objection to pictures in a grammar if properly employed. But when Mr. Holmes or any one else undertakes to *illustrate grammatical facts* or principles by means of pictures, he undertakes an impossibility, an absurdity.

He ridicules our objection to the picture designed to illustrate the sentence, "Ships sail on the sea." He exclaims, "A barque, a schooner, a sloop, and a row-boat! Bless his nautical knowledge; though as to the opposite winds, he

seems to have forgotten that vessels can sail on opposite tacks with the same wind. But it would seem that the reviewer never heard of *ships* as a generic term." No, not as a term including row-boats. Nor Mr. Browne, either! If he has any authority for such a use of the term, will he be kind enough to produce it? Our "nautical knowledge," we presume, is not equal to Mr. Browne's. Yet it is no news to us that the same wind may propel vessels in opposite directions. We have, however, to learn that vessels can sail in opposite directions *on the same tack* with the same wind. If friend Browne will but turn to page 13 of the little book in question, he will perceive that the sloop on the right and the schooner on the left of the picture are *both on the larboard tack*, yet going in opposite directions! Their masts, instead of leaning one way, viz., to the left, lean toward each other. If they are not represented as propelled by opposite winds, we confess we know nothing about pictures. Nor is this all. The barque, in the middle of the picture, is represented as sailing *before the wind*, and yet her signals are *floating astern*, as though the wind were ahead! Does Mr. Browne see the point now? And are such misrepresentations fit to go into a book for children, even supposing that a correct representation illustrated the subject in hand?

He thinks we don't understand the design of the cut of the steam-tug towing a ship with a row-boat attached. Well, if we, in our simplicity and with all our acquaintance with words, cannot understand the object of such illustrations, we wonder more than ever how the little ones for whose enlightenment they are intended are to understand their use. If the cut is meant to be merely "a pictorial presentation of the sentence beneath it," as Mr. Browne says is the case, and if it is of any service, why not have more of these "pictorial presentations" of sentences? Why not more of this improved style of hieroglyphics to explain to children the meaning of plain English sentences? It seems to us that Mr. Holmes might in a second edition improve his little book in this way wonderfully. If he would only do this, the little fellows would doubtless cry for his grammar! They would not think of using any other than this sugar-coated intellectual pill! And when set to digest-

ing it, how tickled they would be, and how they would grow in their knowledge of hieroglyphics!

Mr. Browne, moreover, unhesitatingly charges us with disingenuousness, because we referred to the "Practical Suggestions" at the close of the book as misplaced, and asks, "Why does he conceal the fact, which he must have noticed, that on [*sic*] the very first sentence of the first page of the text, the attention of teachers is expressly directed to these Practical Suggestions?" That sentence, the existence of which we were not aware of till informed of it by Mr. Browne, we find is printed in fine type, and was inadvertently and altogether overlooked by us. Had we seen it we certainly should have modified our remark concerning those "Suggestions." We meant no injustice to Mr. Holmes, and trust that he and his companion will accept our apology.

The next lash, however, is less deserved. It politely charges us with falsehood. It is in these words: "When he says, 'the directions to the learner as to the use he is expected to make of the "Exercises" . . . are often placed after the exercises,' he asserts what is simply not the fact. The directions . . . are *uniformly* placed before the exercise." To show that our reviewer is in error in saying that "the directions are *uniformly* placed before the exercises," the reader will turn, for example, to page 27. There, after the exercise, we will find this direction, ["No attention should be paid as yet to any words but the nouns and verbs. The other kinds of words are to be noticed as an acquaintance is gained with each kind."] Not a word of this before the exercise. Again, on page 31, after the exercise to which it refers, ["If the teacher think proper, the indication of the Numeral and the Definitive Adjectives may be omitted."] It would take no more type or space to insert directions like these where they belong, viz., before the exercises. Then Mr. Browne could truthfully speak of uniformity in regard to their position.

He says that in our notice of the grammar, we make "no attempt to show that it is not, altogether, a very suitable book for its purpose." We did not expect to please everybody. Mr. Browne must think his friend's little book a very important work if he expects us to go into particulars and

give the evidence in full on which our judgment was based. Had we the space, however, and was the book worthy of it, we could give abundant proof of its unsuitableness.

The last charge is that we don't understand our business. This is the most cutting stroke of all! Look at it. "There is not a particle of evidence that the reviewer himself is at all qualified to judge of its suitability." This is putting it "pretty strong," Mr. Browne—"not a particle of evidence"—"the reviewer himself"—"at all qualified." Surely, this must have been penned during "the heated term." If written in cooler moments, even the writer of it, who of course understands the art of criticism—at least, he can give lessons on it—might not show quite so many signs of ebullition.



CURRENT PUBLICATIONS.

GOOD morals result from natural disposition and education, gentle manners from association. Neither are much helped by a text-book alone, for, even in morality, the education necessary is rather that of example. If we study morals from a book and live among thieves we probably will steal. Still books on morality do good as guides, and those on manners are quite popular. How shall I get into good society? is the question with which Mr. Gow opens his book.¹ By good society he means the society of the good. But his definition of good people as "those who are educated to know, and trained to practice, the rules of good morals and gentle manners," is decidedly faulty. A large number of good people, and perhaps the majority of them, have no idea of gentle manners, except as that term is taken to indicate the natural action of a good heart. We should call such manners good, but Mr. Gow's idea of a gentleman is rather that of the dictionary, one raised by manners or education above the ordinary level. In this understanding, the term

¹ GOOD MORALS AND GENTLER MANNERS. For Schools and Families. Alex. M. Gow, A.M.—Wilson, Hinkle & Co., Cincinnati and New York,

"good society" is not synonymous with the society of the good. To get into the society of the good, one need have no manners to speak of, for there are good people of all grades. After all these "guides to good society" do no good. Mr. Gow truthfully says, that "people are like birds; they go in flocks, each kind by itself. Those of similar feelings, tastes, and habits, associate together." So if a person should, by patient study, learn how to act in a grade of society above that to which he was accustomed, he would still be uncomfortable and out of place, unless his tastes were identical with those of the persons of that grade. People of like habits come together naturally. The idea of the last part of the book is to teach how to behave in society, but unless one is accustomed to a certain "set" he would feel uncomfortable there, and all the rules of behavior ever formulated would not help him. "Eyes and ears should be in constant requisition, noticing quietly the language and manners of those who are well versed in the rules of good society." What a life to lead, to be on a constant lookout that you may not make a blunder! As we said before, manners are learned naturally by association, and are not helped by book rules. We are sorry to see these minute rules on behavior, for they detract from the dignity of an otherwise excellent book.—The moral part of the work is well done. The duties of man to man, and of man to God, are quite fully mentioned and explained, and in all these discussions strict justice is, as it should be, the foundation. On the question of amusement, such a hard one to decide, Mr. Gow does not go into detail, but lays down general principles, leaving it to the conscience of each to decide what is right. As to the amount of amusement he says: "When amusement ceases to be a recreation, and becomes a business, it should be abandoned." This is sound doctrine. We should not forget that our amusements are intended to re-create us, so that we may take up our work with renewed zest. In this view many things which are innocent in themselves, as for example excessive dancing, become wrong, because they cease to renew our powers. Temperance in all things is the lesson to be impressed upon young people. Other questions of practical import are touched upon and are well handled.

EDUCATIONAL INTELLIGENCE.

IDAHO TERRITORY.—The report of the Territorial Superintendent does not contain returns from all the counties, but probably those which are omitted have as yet no established schools. In 1871 the number of schools was 28, which was increased to 33 in the following year, while the number of pupils rose from 906 in '71, to 1440 in '72. This is a good proportion of attendance, for the population between the ages of 5 and 21 years is only 1923. The County Superintendents complain quite generally of one of the school laws which allows all districts to draw an equal amount of money from the school fund. Thus a district which contains only ten children obtains as much pecuniary assistance as one which contains a hundred. The expense of supporting the schools for the two years which this report includes, was about \$36,022.49.

MINNESOTA.—MINNEAPOLIS.—This city has received from Mr. Charles Macalister, of Philadelphia, a gift of property worth \$100,000 or more for educational purposes. The only thing necessary to secure this gift is the placing in the hands of trustees by the citizens the sum of \$30,000, the interest of which will be used in the payment of professors for the college to be established. Of this sum several thousand dollars have already been promised.

TENNESSEE.—One of the chief difficulties to be encountered, and already seriously felt in this State, is that of supplying the colored schools with suitable teachers. White teachers prefer white schools, and so great is the present and prospective demand for them that in many of the counties great difficulty will be experienced in supplying the white schools with competent teachers. Consequently there will be much need of teachers from among the colored people for their own schools; and, unfortunately, but few of them are now to be found in this State who are sufficiently qualified for the work.

TEXAS.—The principal educational needs of the State are, efficient normal training, and better school buildings.

It is difficult to provide educational facilities for all in a population so widely scattered, but it is encouraging to note the large increase in the number of schools and pupils. During the year 1871-72, 1924 new schools were organized, and the attendance increased 84,007. The language of the report is somewhat ambiguous, but it appears that the 127,627 children reported as receiving instruction, does not include the 4,500 attending private schools. The school population aggregates nearly 250,000. Little is said of the compulsory features of the school-law, and no statistics are given to show its efficiency where it has been enforced. The teachers are well paid, and the scholars are generally well taught. \$1,188,818 were expended for educational purposes during the year.

MISCELLANEA.

PROF. CHARLES G. ROCKWOOD, Jr., Ph.D., has been elected Professor of Mathematics in Rutgers College, New Brunswick, N. J., the position formerly held by Dr David Murray, now Commissioner of Education for Japan. Prof. Rockwood is a graduate of Yale, and has for some time occupied the Mathematical Chair in Bowdoin College. Though a young man, he is well known as a writer on scientific subjects, his articles being extensively copied and commended, both in this country and in Europe. He is to enter upon the duties of his new office in January, 1874.

A VIRGINIA school board has appointed a New Hampshire man Principal of its schools. The *Educational Journal of Virginia* warns him that if he teaches a sectional spelling book, or a political multiplication table, that it will order him out of the State.

A FRENCH gentleman, learning English to some purpose, replied thus to the salutations: "How do you do, monsieur?" "Do vat?" "How do you find yourself?" "I never loses myself." "How do you feel?" "Smooth, you just feel me." "Good morning, monsieur!" "Good! No, it's a bad one; it's vet and nasty."

WILLING to sacrifice himself for the public good. *Boy*—"Teacher, there's a gal over there a-winkin' at me!" *Teacher*—"Well, then, don't look at her!" *Boy*—"But if I don't look at her, she'll wink at somebody else!"

THE *Minnesota Teacher* has a department named "Common Ground," which is made up entirely of selected articles. The editor claims that this "unique feature" has no rival in any educational journal of the country. If he should take the trouble to look through a few of those journals, he would find that they consist almost entirely of "common ground." Occasional copying is well enough, but if every one makes up a whole journal in that way, there will be nothing to copy in a short time. Soon we shall have notices of this kind: "Mr. So-and-so has accepted the position of editor of the — *Teacher*. A more fit person to assume the editorial scissors and paste-pot could not well be found."

THE *Educational Journal of Virginia* says it is sorry to have met Dr. McCosh at the National Educational Association of Elmira, and to have seen his impatience of opposition, and want of generosity in acknowledging and retracting a mistake.

A FEW days ago the *N. Y. Times* contained among its "board" advertisements, the notice of a room with "pantry, hot and cold water, and sun, adjoining, to let to two young gentlemen without meals." If any gentlemen without meals would like to live near the sun, let them apply at once.

SOME one has been at the pains of tabulating the various honorary degrees conferred at the late college commencements. According to this, the degree of LL.D. was bestowed upon sixty-three persons; D. D. upon ninety-two; A. M. upon fifty-eight; Ph. D. upon four, and D. M. (Doctor of Music) upon one.

THE *California Teacher* says our Geographical Notes are invaluable in the school room. We always regarded the *Teacher* as a journal of taste.

A MAN on the 4th Ave. in this city advertises "Every requisite for funerals." If he supplies a corpse and mourners we do not know.

AMERICAN EDUCATIONAL MONTHLY.

NOVEMBER, 1873.

THE ART OF SPEAKING THE TRUTH.

II.

ANOTHER reason for untruthfulness in conversation is that we do not well enough understand the force of words. Our attention has often been called to the tendency in young people, and this tendency is by no means confined to young people, to use adjectives and interjections of the strongest kind on very ordinary occasions—to deal habitually in words disproportionate to the ideas they wish to convey. The worst thing about this is not, it seems to me, that when we really have occasion for strong expressions we find our vocabulary exhausted, although that might be inconvenient, it is that we lose respect for words, the line between truth and falsehood becomes obliterated, and language fails of its legitimate function. Just as when one sits down day after day to a table overloaded with all sorts of dainties, one loses his relish for food, the most exquisite dish from being seen so often and in such inappropriate conjunction becomes unpalatable and the appetite fails miserably, you have mental dyspepsia, and language loses its deep significance in dissipation. An exclusive diet of bran bread will ruin the digestion as surely as an unwise profusion of rich food; so that other class of people who make a single word or phrase

do duty in describing everything that comes into the cognizance of the five senses, fail of an intelligent, conscientious use of language, and find in time their ideas dwindling to suit their mode of expression, their sensitiveness to truth growing dull, and their whole moral nature taking a step downward.

"It is not enough thought of," says some one quoting from Coleridge, "that 'accuracy of style is near akin to veracity and truthful habits of mind,' and to sincerity and earnestness of character." "Not enough thought of;"—our faithful educators labor to give their pupils a thorough understanding of the subjects they teach, but forget, often, how much a clear expression helps to promote intelligent ideas, and do not give enough attention to the language which should be an accurate measure of the progress and proficiency of these pupils.

Arithmetic is a subject universally taught in the schools: it is an exact science, and we Americans have a respect for it; perhaps only because it is so intimately connected with dollars and cents, for who but a teacher ever thinks of its being founded upon eternal principles? But if the teacher remembers it, the boys and girls may come to see something of the beauty of straight lines and correct estimates in the moral world. The language of arithmetic, the mathematical definitions and the rules, whose correctness may be so easily demonstrated by the processes depending upon them, I find an excellent specific for the careless use of words. It may be one object of studying arithmetic to "sharpen the wits," but a more important object is to clear away the mists from the brain, to enable the pupil to develop his ideas with order and precision and also to express them exactly. It is the logic of the lower schools. So, in teaching it, I would give quite as much time and attention to the recitation of rules and definitions, the expounding of principles and the explanation of processes as to the performance of examples or the solution of problems.

There is, indeed, not a recitation in school but ought to do something toward forming the language of the pupil. His stock of words is at first necessarily small; as his ideas expand his reasoning powers develop, and his knowledge in-

creases, he gathers new words from intercourse with his books, his teacher and his class-mates. It is the duty of the teacher to see that this progress in language keeps pace with his progress in other things. If it does not, how soon the student comes to resort to subterfuges and makeshifts in order to express himself in conversation, or his ideas dwindle away to suit the forms of expression he has at command. Just now, while the formative process is going on, while the boy is yet under the eye of a master is the time for him to learn to put the right word in the right place, and that it makes a botch of things to put it anywhere else. The limits of this paper will allow me to give only the merest hints of means and methods: indeed it is meant to be only suggestive. I am convinced that the proper use of language should occupy a much more prominent place in the education of our children than it does now. I believe with St. James, that when a man has come to "offend not in word the same is a perfect man and able to bridle the whole body." I would briefly notice one or two other usual studies which seem peculiarly fitted to teach an honest use of the mother tongue.

In almost all our schools—in the least pretentious of our villages, we find a class of young people studying some foreign language; and this ought to be a benefit to their own English tongue. If by lessons in arithmetic one may learn something of the force of words and the obligation he is under to use them discreetly, the pupil may find in translation a means of enlarging his vocabulary and increasing his command of words and expressions. The advantages that faithful translation offers, to give a larger and more liberal language, as well as a better and more accurate use of terms, has been talked about so much by the friends of the ancient classics, and by the friends of the modern languages, that anything I can say upon this subject seems trite. And yet it is a rare thing even now to go inside a school-room and hear a class render Virgil or even the anecdotes of the Reader into pure and pleasant English. Foreign idioms done into literal English are simply ridiculous, and the man or woman who cannot teach his pupils to render good Latin, German and French into decent English, had

better leave the languages altogether out of his curriculum

"Think," says President Buckham of the University of Vermont, "what an admirable discipline in English would be a faithful translation of Virgil, that most shamefully maltreated of all the school classics! Nothing is easier than to run the words together into the form of a sentence; but to find English words wherewith to express Virgilian thoughts; to reproduce in pure English idiom that 'rich economy of expression;' to be able to look on his picture and then on yours, and say you are satisfied—that is a task which will compel you to sweep the whole horizon of English in quest of its choicest words and expressions, and which will only bring you as your highest reward an intelligent appreciation of the difficulty, the impossibility of complete success." The same scholarly man recommends to the schools frequent and systematic exercises in English composition as a means of improvement in the use of language. "Nothing," he says, "contributes so much to clearness, precision, pointedness and elegance in language as much practice with the pen." And yet I have noticed in the compositions of boys and girls at school the same looseness with regard to facts, the same sweeping generalizations, the same carelessness with regard to truth that distinguishes so much of our newspaper writing. It is with the young boy or girl in the Grammar or High School, as it is with the penny-a-liners in the world of affairs. They are quite ready to sacrifice sense to sound; they would rather reply to an opponent with a good hit than to meet his arguments fairly; they think more of a brilliant paragraph than a conscientious one. Is there not an opportunity here for faithful teachers to do the world good service in convincing these young people that it would be better to forever hold their peace than to fling words about in a thoughtless and dishonest way? I would instil into their minds the sterling doctrine of that old trumpeter, Thomas Carlyle. "For if a good speaker—an eloquent speaker—is not speaking the truth, is there a more horrid kind of object in creation?—Excellent speaker! but what if he is telling me things that are untrue, that are not the fact about it—if he has no judg-

ment in his mind to form a right conclusion in regard to the matter? An excellent speaker of that kind is, as it were, saying, 'Ho, every one that wants to be persuaded of the thing that is not true, come hither!' "

So in correcting a composition, I would carefully prune away every unnecessary adjective, every rhetorical flourish; I would go further, and question the matter of the composition: where I found impressions put down as if they were facts I would send the writer to looking up his authorities. I would not, of course, insist on his taking my notions of truth, but that the inferences, conclusions, judgments, should be his own genuine thoughts, and that he should be able to give an intelligent reason for them. As to the language, it should be free from slang—the best at the writer's command and used mainly with a view to making himself understood.

Frequent written examinations on every school subject are regarded by our best teachers as invaluable aids in securing accuracy. The written paper is not only a test of scholarship, but an excellent means of making the pupil aware of his faults and deficiencies. There is nothing more convincing to the positive pupil than a statement in his own handwriting with the teacher's estimate of its value marked in figures upon it, placed before his eyes. The light that will dawn upon the mind of a student who has been accustomed to think well of his attainments, upon a first occasion of this kind, is sometimes overwhelming; but the discipline is very wholesome. But when the classes are large, frequent written examinations are often impracticable. It is a good thing then to have the daily recitation occasionally written out upon the board, or to require one or two of the pupils, different ones upon each day, to write out some of the topics of the review or the advance lesson. Is it not a good thing for our enthusiastic, blundering, boys and girls to serve an apprenticeship of two, four, eight, ten years at an institution where they will have the benefit not only of regular and reasonable work, but of the opinion of a master upon that work and the manner of its performance, given regularly, professionally and systematically in a way that they cannot fail to understand?

Of course all this supposes that the teacher himself is honest and knows something of his own obligations to the truth. "The written rule," some one has said, talking about another matter, "is of little use, is scarcely intelligible until we have seen it reduced to practice by one who can practice it easily and make its justice apparent. The ease and readiness of the master are infections; the pupil as he looks on conceives a new hope, a new self-reliance; he seems already to touch the goal which before appeared removed to a hopeless distance." So if the teacher be a sincere man, candid and open in dealing with his pupils, his "words and deeds of a piece," if he have a scholar's genuine reverence for truth, he may do more for his pupils than to teach them ways and means; he may inspire them with a love of honesty, single mindedness, and sincerity, and with a suitable contempt for shams, subterfuges and insincerity. He may teach them to separate the real from the false heroes in history, and to set for themselves worthy objects in life.

F. K. K.

USEFULNESS OF THE AGRICULTURAL COLLEGES.

THE subjoined letter by Prof. G. W. Atherton, of Rutgers College, New Brunswick, N. J., appeared first in the New York *Tribune* of Aug. 22d. It has been quite extensively commented upon, and we reproduce it as the best account of the work accomplished by the Agricultural Colleges which we have seen.

In the paper read before the National Educational Association, at Elmira, on the evening of the sixth instant, on the subject of the "Relation of the General Government to Education," I had occasion to show that the institutions founded on the basis of the Congressional land grant of 1862, and the commonly, though erroneously, called "Agricultural Colleges," were doing an amount of work for popular education which was not only far greater than the public in general supposed, but greater than could reasonably have

been expected of institutions which have been in existence in many cases only a few months, and, on the average, less than five years. For one item, I stated that twenty-four (24) of these institutions contained last year two thousand six hundred and four (2,604) students. A distinguished gentleman present inquired how this large number was made up, and whether or not it included all students in the institutions with which in some cases the so-called agricultural colleges were associated, specifying particularly Cornell University and the Sheffield Scientific school. I had great pleasure in replying that the figures had been taken from advance sheets of the forthcoming report of the United States Department of Agriculture, kindly furnished me by the Commissioner, in which the students were classified as, first, "Number of Students in the Agricultural and Mechanical College for the collegiate year," and, second, "Number of Students in the University and Agricultural and Mechanical College for the collegiate year;" but that without referring to my documents I could not reply in detail respecting any one institution. I had no doubt, however, since the Department at Washington had made up its tables on the basis of this division of students into two classes—agricultural and mechanical students forming a class of themselves—that Cornell University and all others, were put upon the same footing, and their students classified in the same way. The gentleman who had propounded the inquiry replied that this was "unsatisfactory," which I have no doubt was true. Since reaching home and getting access to my papers, I have taken pains to verify this point, and find the case to be as I had supposed. Cornell University, for instance, is set down as having 207 students in the Agricultural and Mechanical College, and 525 in these Colleges and the University, or, as it might be stated, 207 students in the agricultural and mechanical departments, and 318 in the other departments. In case of the Sheffield Scientific school, 157 are given as belonging to the agricultural and mechanical departments, and 809 as belonging to these and the whole University. This, of itself, does not indicate whether the number 157 includes all the students in the Sheffield school or not. But I find that the

catalogue of Yale College for 1871-72 gives 174 as the number belonging to the Scientific school, 27 of whom are "special" or "graduate" students. It seems probable, therefore, that the 157 mentioned are intended to include all except these 27. The number 157 is a clerical or typographical error, obviously, for 147. How many of these should be reckoned as receiving the benefit of the Congressional land grant it may be difficult to say. Certainly not all of them. But any deduction that needs to be made on this account is much more than made up from other sources. The Illinois Industrial University, for example, is set down as having 194 students in the "Agricultural and Mechanical Colleges," or departments, and 381 all told. But here, in estimating the number of students who are receiving an education by the aid of the Congressional grant (and that is the real question in each case), we should include the entire number 381, for the reason that all the funds of this institution have been accumulated on the basis of that grant, and directly in consequence of it. The same is true in several other instances. It is a distinct fallacy, too, not to put it too strongly, to convey the implication that the usefulness of these institutions is to be tested by the question, how many of their students are studying "Agriculture," or how many "farmers" have they turned out? the true test is indicated by the terms of the act of Congress of 1862, which terms are generally repeated in the State laws relating to these institutions. In establishing these institutions Congress declared its design to be to provide a "liberal and practical education for the industrial classes, in their several pursuits and professions in life;" and to this end the institutions were to teach, not necessarily manual farming, but "subjects related to agriculture and the mechanic arts." It is the more important to note this, because the fallacy mentioned is partly suggested by the misleading name "Agricultural College," and lies at the bottom of the popular misapprehension as to what any institution of learning aims to do, or can do. The enemies of the colleges perfectly understand this, and are therefore likely to repeat the fallacy until the good sense of the public makes them ashamed to do so.

—G. W. Atherton.

ERRORS IN THE USE OF PREPOSITIONS.

III.—MISAPPLICATIONS.

WE noticed in our last article a few instances of erroneous omissions of prepositions. We purpose now to give examples of misapplied prepositions. One thing that is remarkable among these misapplications is the fact that in certain cases the preposition employed is, in meaning, just the opposite of that which the idiom or the sense calls for. This will be seen as we proceed.

AMID or AMIDST.—This word implies, if not a plurality of objects, at least certain surroundings in the midst of which objects can be regarded as being or acting; as, amidst his engagements; amidst the waves; amidst the storm; amidst the crowd; amidst the grass. In the following line, however, it is improperly used for *in*:

“One day *amid* the place,” etc.—*Watts*.

In the following example it is misused for *among*; “*Amidst* all these books I cannot find the one I want.”

AMONG or AMONGST.—This is a word of similar import, but differs from *amidst* in always referring to a number of objects; as, among the ships; among the stars; among the people; among the faithless. It is, however, sometimes improperly used for *amidst* or *in*, as in the following examples: “We were almost separated from society *among* [amid] lovely and romantic scenery.”—*Irving*. “She alone was miserable *among* [amidst] contentment and happiness.”—*Edward Garrett's “Dead Sin,”* p. 100. “Then he came out silently *among* [amidst or in the midst of] the crowd of worshipers.”—*Ditto*, p. 140. “He made his way *among* [amidst or through] the long grass.”—*Ditto*, p. 142. “He was lost *among* [in] the crowd.”

AT.—This is frequently misused for *in* in connections like the following: “He died *at* Paris on the fifth of June.” The impropriety here lies in using a preposition that implies a limited space for one implying comparatively larger bounds. If the place spoken of, instead of being a notoriously large city, were a comparatively small place, or so

far distant as to be readily so considered, then *at* should be used instead of *in*; as, "They live *at* Port Jervis;" "He died *at* Hong Kong during the plague." But "He died *at* Paris" is hardly more appropriate than "He died *at* France." This error appears twice in the following sentence: "In 1810 he published the first number of the Sketch Book *at* New York, and the two volumes, so familiar to our eyes, *at* London in 1820."—*Sat. Rev.*

BY.—The following singular use of *by* for *to* appears in A. R. Hope's book on "Dominies:" "I cling *by* old traditions." This preposition is not unfrequently improperly employed for *with* after a verb, in connection with a noun denoting the instrument or means rather than the agent or doer: "He shall slay thy people *by* [with] the sword." Occasionally, it is improperly used after an adjective for some other preposition in consequence of the writer's regarding such adjective as participial in character. The following sentence illustrates this: "Much gratitude will be due *by* [from] others besides the writer."—*Pref. to Holmes's First Lessons in Eng. Gram.*

FOR.—In New England the expression "named for" is widely used instead of "named after." Thus Worcester, in defining NAMESAKE, says, "One who is named *for*, or has the same name with, another." And Hawthorne writes "He named his two children, one *for* Her Majesty, and the other *for* Prince Albert." This rather implies that the children were not named for themselves, but that the names given them were for others, who, singularly enough, had names of their own already. The time-honored English expression, however, is "named after"—not *after* in point of time, though this sense is not inadmissible, but *after* in the sense of *from*, or perhaps *in consideration of*, or *out of regard for*. The following example illustrates this: "Thou hast had already seven husbands, neither wert thou named *after* any of them."—*Tobit*, iii. 8. Sometimes, however, *from* is used in this connection instead of *after*. Thus,

"I lay the deep foundations of a wall,
And Ænos, named *from* me, the city call."—*Dryden*.

FROM.—After the word *exception*, denoting that which is

excepted, Dr. Johnson says *from* should be used. In accordance with this, we find Dr. Campbell, for example, speaking in his Rhetoric of "exceptions *from* the rule." But for this direction Dr. Johnson gives no reason. Whether he was governed or not by the notion that a word compounded with *ex* requires to be followed by *from*, we cannot say. The notion, however, is a false one. The practice of English writers generally is against Johnson and Campbell in this respect. *To* is the word commonly and properly used in this connection :

"That proud exception *to* all nature's laws."—*Pope*.

Under other meanings of the word *exception* the preposition *against*, as well as *to*, is admissible. In no case, at least in the English of the present day, is "exception *from*" idiomatic.

"Averse *from*" is a similar Latinism which Johnson prefers to "averse *to*." But "the prevailing and best modern usage is in favor of *to*, instead of *from*," in this connection as well as in the other.

The following sentence presents an unusual misuse of *from* for *of*: "They were within about three miles *from* Kinston."—*Cor. N. Y. Herald*, Dec. 20, 1862. *From* would be correct if the preceding word *within* were omitted. But as the sentence stands, *of* is the word the writer should have used in place of *from*.

IN and INTO.—The employment of these prepositions, one for the other, is frequent enough among the uneducated: "When do you go *in* business?" "There is a nail *into* the board." Occasionally, however, persons who aspire to being authors may be found erring in the use of one or both of these words. Gardner, in his "Music of Nature," speaks of "the continued roll of the artillery bursting *into* terrific explosions." Swinton, in his "Rambles among Words," says, "These papers I have not incorporated *in* the present volume." And Edward Garrett, in "Premiums Paid to Experience," has "I had never come *in* much personal contact with the man."

OF.—This word is improperly applied in the phrase "Of all others;" as, "The morning *of* all others when we need

milk the most, it is not to be had." It should be "*above* all others." The error is an exceedingly common one, and is made by very many who pass for good speakers and writers. The following are additional examples: "He was glad to meet such a large [so large a] crowd of representative commercial men, as they *of* all other classes in the community could probably most effectually aid him in the attainment of his object."—*Gen. Hancock, as reported in N. Y. Times, Feb. 16, 1864.* "The language with which Rask was dealing was the one *of* all others wherein the difference in question required to be accurately drawn."—*Dr. Latham, Ethnological Essays.*

In such phrases as "of an afternoon," "of an evening," *of* should be *in* or *on*. The expression, it is true, is employed by some of our most popular writers. Washington Irving, for instance, employs it again and again: "Sometimes she would be seen late *of* an [in the] evening sitting in the porch of the village church;" "It is a pleasant sight *of* a Sunday morning to behold," etc. This, however, does not argue its correctness.

Sometimes *of* is used where *in*, meaning *on the part of*, is the word required, as in the following sentence from Moon's preface to the fourth edition of "The Dean's English:" "Surely, after this, it will be only modest *of* the Dean to retire from the office of lecturer on the Queen's English." Mr. Moon is generally pretty correct; but he certainly errs in sanctioning by his example such a use of *of*. The applications of this preposition are sufficiently numerous and various without adding to them by using it in this sense.

Occasionally *of* is misapplied for *for*. Here is an instance: "The history of this island presents continual pictures of the miseries and poverty produced by the grasping avidity *of* [for] gold."—*Irving's Columbus.* If we wish to describe the character or nature of the avidity, it is right to introduce the descriptive adjunct with the preposition *of*; as, "the avidity *of* desire." But when we speak of the object towards which one's avidity goes out, *for* should introduce the supplementary adjunct—"avidity *for* wealth." A similar distinction should, also, be made in reference to certain other words. But of this by and by, perhaps.

In the following sentence *of* is misused for *over*: "You are less amply supplied with abstracts of voyages over these regions than *of* many other parts of the ocean."—*Capt. Phinney, as quoted by Maury, Phys. Geog. of Sea*, p. xiii. The writer seemingly designed the connection to be "abstracts . . . *of* many other parts," etc. But the "abstracts" referred to were not abstracts of seas, but of voyages; and the true meaning is "of voyages *over* many other parts of the ocean."

Among other misapplications of this preposition which might still be mentioned is the using of it instead of *to*. Here is an example: "We should not make any statement inconsistent with or contradictory *of* some other statement at some distance before it."—*Kerl, Treatise on Eng. Lang.*, p. 456. This should be "contradictory *to*," as in the following sentence from Addison's "Freeholder:" "The schemes of those gentlemen are most absurd and contradictory *to* common sense."

ON or UPON.—Only the other day we read, in a morning paper, "The net looks a frail tenure whereon to trust the great weight which is to depend," etc. We "trust *to* or *in*" not "*on*" an object. "Whereon to trust" should have been "whereto to trust." In the same article also occurs the following misuse of *on* for *against*: "The bumping of the balloon *on* the chafe-cloth tends to crack this varnish." "Bump *against*" is the idiomatic form, not "bump *on*."

In the following example *upon* is misused for *from*: "It is a careful constitutional history of England *upon* the accession of George the Third down to the present time."—*Mass. Teacher for 1863*, p. 334. *Upon* in this connection is equivalent to *at the time of*; but it is evident that the writer means that the history reaches *from* the accession of George the Third, and he should have said what he meant in proper language.

In certain connections *on* is sometimes misused for *of*. Thus: "He wishes to use only the interest *on* his money." Money is let out *on* interest; but the premium paid for the use of the money is the interest, the earnings, *of* the money.—After the word *independent*, *on* was formerly, and is still occasionally, used, simply from the fact that we say "de-

pendent *on*." But there is scarcely any accounting for idioms. The usage of the best writers of English is at present against *on*, and in favor of *of*: "The town of St. Gaul is a Protestant republic, independent *of* the abbot."—*Addison*. In the following instance, if *yesterday* is an adverb, *on*, as was shown in our first paper, is redundant; if it is a noun, *on* should be *of*: "The cavalry fight *on* [of] *yesterday* proves to have been very obstinate." Either omit *on*, or, which is better, use *of*; but don't indulge in such a phrase as "on yesterday."

OVER.—It has become quite common to say and write, "over his signature," where formerly "under his signature" was the only known form of the expression. This has undoubtedly grown out of the fact that, in signing a paper, we write our name at the end, and hence under the letter or article receiving our signature. Of the statements contained in a paper so signed, it is natural enough, perhaps, to say that they were made "*over* the writer's signature." In this view of the case, we are not disposed to censure those who use this form of words, especially if they do it from force of habit or without thought as to its propriety. But we smile at the punctiliousness of those who do it with the express aim of being correct. As for ourselves, we never say "over" one's signature. We are conservative enough to prefer the other, the only classical form of the expression. And, indeed, if candidly viewed with reference to its origin, there can be no objection to it. On the contrary, its propriety becomes apparent. Formerly in England all edicts, grants, or letters-patent received the royal signature or sign-manual, as it is called, *at the top* of the instrument, the validity of which was completed by having the king's seal also impressed beside the signature, the instrument itself following on literally *under* the king's "hand and seal." So, too, with many private papers. Hence the expression, "*Under* one's signature." In process of time, however, as the place of the signature and seal became changed, the expression "Under my hand and seal," or "Under his signature," having acquired a conventional meaning, and conveying the idea of acknowledgment and authorization, it was, and in legal transactions invariably is still, retained.

A case nearly parallel with this we have in the phrase "Under date," say, of January 1st. Originally, the date of letters was uniformly placed at the top of the sheet, so that the contents of a letter dated, we will suppose, "January 1st, 1345," were literally "given *under* date of January 1st." Afterwards, however, it became quite common to date letters at the end, some preferring this to putting the date at the beginning. And though the practice has never become universal, as may be said to be the change in regard to the place of one's signature and seal, yet no one, we presume, ever thinks of speaking of "receiving advices from Smith & Co. *over* date of January 1st," even though the dating of the letter, as well as the signature, may appear at the bottom. Again, in our popular magazines and weekly papers, a writer's name, though it may not be strictly speaking his signature, very often stands at the head of an article, denoting of course that the person named is the author of it. Anything in such an article might very properly be said to appear "*under* Mr. So-and-so's signature." It would, in fact, literally be *under* his printed name, and presumably *under* his authority that the article appears in type as speaking his thoughts. In short, the use of the word *under* in the phrase "Under his signature," is not only well established, but altogether just and proper. There is really no good reason for squeamishness in regard to its use. One might as well object to saying that he had just received news from London "under date" of October 15th, because the letter containing the news happens to be dated at the bottom!

TO.—The misapplications of this word are numerous. We notice only a few of them. Gibbon, for example, in the following sentence, strangely enough uses it for *for*: "It is not easy to conceive that in substituting the manners of Persia *to* those of Rome, Diocletian was seriously actuated by vanity."—*Decline and Fall*, Chap. xii. Archbishop Whately uses it in the following sentence for *of*: "To solicit is simply to make a request *to* some one whom we address as our superior."—*Eng. Synonyms*, p. 40. Dr. Campbell uses it for *on* or *with* in saying "You have put it out of his power by engaging his attention *to* something else."—*Phil. of Rhet.* Macaulay employs it for *at* when he speaks of

"putting up their favors *to* auction."—*Miscel.*, Vol. I., p. 356. Dean Alford uses *to* for *with* after the word *contrast*: "in contrast *to*;" "to contrast one thing *to* another," and defends it thus: "Contrast partakes of two ideas, that of opposition and that of comparison. Now we oppose one thing *to* another, and we (commonly) compare one thing *with* another. Still, as the idea of opposition is, beyond question, the prevalent one, I should prefer *contrast to*."—*Queen's Eng.*, p. 196. We should, however, reason in regard to it somewhat thus: When we "compare" *dissimilar* things we use *to*; as, a ship to a woman, a man to a pendulum, anger to fire. When we compare *similar* things, we use *with*; as, Cicero with Demosthenes, a translation with its original, small things with great, one word with another. Now we always "contrast" similar things, or things of a similar class or nature, to note their difference. If, therefore, the same rule is to govern us in contrasting as in comparing objects, we should contrast *with*; as light with darkness, generosity with meanness, a palace with a cottage, John's conduct with James's. So, likewise, we should say "In contrast *with*:" "A yellowish white sheet of paper in contrast *with* one of pure whiteness, appears exceedingly dingy." Good writers, however, are divided upon this point.

A strange misuse of *to* for *from* appears in a sentence already given in part: "The net looks a frail tenure whereon to trust the great weight which is to depend *to* it." If a weight is pendent, it depends *from*, not *to*, something.—English people make a sad mistake in saying "different *to*" for "different *from*." Here is an example from the *London Times*: "During Swift's second residence with Sir William Temple, he had become acquainted with an inmate of Moor Park very different *to* the accomplished man to whose intellectual pleasures he so largely ministered." Charlotte Brontë's writings abound with examples of this error: "A cousin, you know, is different *to* a stranger."—*Shirley*, p. 189. "Then I was very different *to* what I am now."—*Do.*, p. 385. Edward Garrett, too: "He was a very good boy, quite different *to* poor Alan."—*Premiums Paid*, p. 184. This misuse of *to*, though a few years ago scarcely known in this country, has of late become quite common, and needs to be

carefully guarded against. It is really no better than "to differ *to*" would be, which happily is not in use. There is, however, a worse combination, if possible, than "different to," which is used by the uneducated in this country, and should be eschewed by every one who has the least desire to speak correctly. It is "different *than*:" "Was the singing to-night any different *than* usual?" "We returned a different way *than* we came." In all such cases, after *different* use *from*, never *to* or *than*. "Was the singing to-night any different from what it usually is?" "We returned a different way from that by which we came."

WITH.—This is also variously misapplied. The following sentences afford instances: "A sovereign's first duty is to conform *with* the wishes of his people."—*Abbott's Napoleon*. Muller, in his "Science of Language," speaks of the cockscomb's being "so called from its similarity *with* a cock's comb." Dr. Trall, in a little book which he has recently published, speaking of his own views, says "These are in direct antagonism *with* the doctrines taught in the text-books." In all these cases, *to* is the word that should have been used instead of *with*.

The following illustrates an exceedingly common misuse of *with* for *by*—the converse of the misuse of *by* for *with*, already noticed: "Like many others, the deacon was unconsciously blinded *with* selfishness." The idiom of the language needs to be carefully observed and followed here.

But we have already prolonged this paper far beyond our original design. We trust, however, it has not been without profit. There are yet other instances of misapplications, and instances of the misuse of other words in connection with certain prepositions, to which we may give an additional paper in a future number of this journal.

S. W. W.

JUDGE JOHN M. LEE, of Nashville, has just given a beautiful locality in the suburbs of Nashville as the site for the Tennessee School for the Blind, paying the sum of \$15,000 for the ground, which, from its high eminence, occupies a commanding view of the city and the picturesque scenery of the surrounding country.

ENFORCED EDUCATION.

A WRITER in the *Massachusetts Teacher* for September, says: "More than eleven thousand persons in this State, between the ages of ten and twenty-one years, were reported to the census office in 1870, as unable to read and write, and of this number, more than one-half were over fifteen years of age. How much or how little is known of other branches of elementary education, we are not informed. Between 1850 and 1870 the total population of the State increased less than 50 per cent. The aggregate number of persons of all ages that could not read and write increased, during the same time, more than 350 per cent." An estimate made by the State Superintendent of Pennsylvania, places the number of children in that State, growing up in ignorance, at 75,000. The State Superintendent of Illinois says: "What then shall be said of our figures for 1872, which record the fact that, in a total enumeration of 882,693 between six and twenty-one, only 693,833 are reported as having attended any school public or private, during any part of the year; leaving 185,860, or twenty-one per cent. of the whole enumeration, in no school. After making allowance for those over sixteen who have completed their common school education, and for invalid children, and for probable shortage in the reports of private schools, and all other reasonable deductions, it may be estimated that not less than 100,000 children of lawful school age, or over eleven per cent. of the whole number belonged to the class of absentees and truants during the last school year." Extracts of similar import might be made from nearly every State report, but enough has been said to give an idea of the extent to which absenteeism prevails, and to prove that the 4,528,084 illiterates in the United States are not found alone in the South and far West, but that the most prosperous States contribute their full quota to this vast army of ignorance.

This is rather an unsatisfactory exhibit when we consider that in 1871, the three States above mentioned spent over \$21,000,000 for educational purposes. It would be thought

that the expenditure of such an immense sum would secure the education of all children of school age. There are, however, good reasons why some, at least, of these children belong to the class of absentees. Many are obliged to care for themselves at an age when they should be attending school, and the labor of others is needed to help support the families to which they belong. Another class, and by far the largest, is composed of those who do not care for education, and who are permitted, through the negligence of their parents, to idle away their time. These we fail to reach, and the most ardent supporter of our school system must admit that, in that respect, it is a failure. It will probably be readily admitted that the State has a deep interest in reducing, so far as possible, the number of its uneducated citizens. Statistics from the reports of social science and prison associations demonstrate that illiteracy is connected with pauperism and crime, as cause and effect. Ignorance recruits the dangerous classes, while education diminishes them. Where education is wholly intellectual it teaches that honesty is the best policy, that fraud and crime do not thrive long; where it is moral, it teaches a higher law, it awakens the conscience and makes it the governing power.

But not only does ignorance steal and murder, it votes, and it is with this phase of the question that the State has the greatest concern. Washington in his Farewell Address says: "In proportion as the structure of a government gives force to public opinion, it is essential that public opinion shall be enlightened;" and William Penn asserts, that if we would preserve the good Constitution left us by our fathers, we must have "men of wisdom and virtue, qualities that, because they descend not with worldly inheritance, must be carefully propagated by a virtuous education of youth." We can support our paupers, and imprison our criminals, but against our ignorant voters we have no defence. Either they exercise the rights of citizenship unwisely themselves, or they become the tools of politicians who work for selfish ends rather than for the public good. It becomes, then, a question of the gravest import how to bring the illiterate classes into the public schools.

Two plans (with some modifications) have been advanced,

the voluntary system with the employment of truant officers, and such an improvement in the schools as shall strongly commend them to the public, and the compulsory system. Both have the test of experience to speak for them. The former is used in Holland, and with such success that education is almost universal. In Sweden, where it also prevails, only 15,841 children of the 628,623 of legal school age were absentees without good excuse. This is exclusive of Stockholm. In that city special efforts have been made to induce parents to send their children to school, and the result is that only 1.2 per cent. of the non-attendants are without sufficient reason for not being in school. The *Westminster Review* says, that enforced education is unnecessary in Scotland, because parents of every class are so convinced of the advantages of education that they voluntarily make every effort to send their children to school. These facts clearly show that under certain circumstances the system of voluntary education can be successfully employed. Of these conditions a homogeneous population is the most important. A system, which depends for its success upon moral suasion alone, can only exist in a country where public opinion can make itself strongly felt. This is the case in the three countries we have cited, but it is not so with us. Our nation is composed of representatives of every other nation, and often those who come to us by no means equal the average excellence of their countrymen. Sometimes, as in the case of the Italians, or Chinese, they form communities entirely distinct, and are as free from the influence of public opinion here, as if they had remained in their native countries. They are separated from Americans by their customs, and it is no unusual thing to find persons who have lived here for many years unable to understand English. So were everyone now in the country educated, and the voluntary system established with the idea of keeping education universal, it would fail, with the first ship-load of Italians or Chinese which landed upon our shores.

The compulsory system has also been employed with success, and notably in Prussia. Her schools have lately been so thoroughly discussed that it is unnecessary to call attention to their distinctive characteristics. They aim to

reach all classes, and the high state of culture prevailing among Prussians is a proof of the good they have accomplished. Experience, then, shows that both the systems we have noticed can be successfully employed. The question is which will best meet our needs.

Our need, as we take it, is something approximating, at least, universal education. Of the ability of the voluntary system to secure this we have had some experience in New York City. Our schools are certainly good enough to commend them to the public, and yet there are several thousand unoccupied places, while 30,000 children are growing up in ignorance. These are beyond the reach of moral suasion; they do not wish to go to school and will not do so unless compelled to. It has been much debated if we have a right to compel them, and if we have, whether it is advisable to put this additional power in the hands of government. But are not the evils inflicted upon us by ignorance greater than those which would result from giving the government this power? Or to look at it in another, and a truer, light. Education is something which every child has a right to demand, it is his preparation for work, and if parents do not voluntarily grant it, the government should interpose to protect the child. A man who sends his child into the world without any education by which he may gain his living, commits a wrong, just as truly as if he wantonly maimed him and unfitted him for work.

We do not think that with us education can, for many years at least, become universal. There will be a large number of adult illiterates whom it will be impossible to reach. The South is too impoverished to educate her negro population. There must be a large class of illiterates. Then among children here, there are many obstacles. If we place them in school we deprive them of the opportunity to work, and must support them, or assist the families which they have helped to sustain. This would necessitate placing children in factories, to work part of the time, or the erection of asylums in which they might live. The former has been done in Massachusetts, and we believe with success. It is not, however, the children who work that we want to reach, so much as those who roam about doing nothing,

learning in the street and in saloons, the wickedness which they will practice in after years. When they grow up they retaliate upon society the wrong inflicted upon them when they were young. Our school system has grown up with us and is undoubtedly the best for us so far as it goes, but it seems that the time has come for a further development, to meet the new position in which we find ourselves.



GEOGRAPHICAL NOTES.

NORTH POLE.—The romance of the *Polaris* expedition has continued to the end. Capt. Buddington and his associates reached Scotland in safety on board a whaler, and at this writing await examination in Washington. The search for them on the part of the *Tigress* and the *Juniata*, resulted in the discovery by the former vessel of the Buddington winter camp on the mainland of Greenland (Prudhoe Land) near Cape Olsen, and opposite Littleton Island, off which, and not off Northumberland Island, as reported by Tyson and Meyer, the break-up occurred. Commander Greer gives the position of the camp from the chart as $78^{\circ} 23' N.$, $73^{\circ} 46' W.$ The *Polaris* had sunk only a few weeks before the arrival of the *Tigress*. She had previously been dismantled to construct the camp, which was made quite comfortable, and afterwards for the building of two whale boats, to which the party committed themselves towards the end of June, and pushed boldly southward. They encountered few perils and no great hardships; reached Cape York on the 21st of June, and two days later were picked up by the whaler *Ravenscraig*, of Dundee. All but three were brought to that port by another whaler, the *Arctic*, Sept. 19. The full story of their experiences is not yet told, and it is only necessary to say here that the charge of inhuman desertion of the Tyson party appears to have no foundation. The *Tigress* saved what papers, etc., had been left in camp, including the mutilated log-book.

SOUTH AMERICA.—A consummation devoutly to be wished is the building of a Pacific Railway through the Argentine Confederation, connecting Buenos Ayres and Valparaiso. The total distance was ascertained last year to be 1103 English miles, of which 319 have been already constructed. A practicable route across the Andes was found in the Planchon Pass, 8,225 feet high. Doubtless in this connection of two oceans the Italians will play as useful a part as in the Suez Canal and the Mont Cenis tunnel. Their immigration continues at the rate of 20 to 25,000 yearly, and they find the climate, mode of life, manners, religion, etc., quite to their taste. They settle chiefly, however, in the cities, and do not attach themselves to the country by acquiring real property. It is estimated that at least a third of the 140 or 150,000 immigrants since 1862 have returned home. While they remain they form a very valuable part of the population. In 1869 they numbered 71,442 in a total population of 1,877,490, far surpassing every other foreign nationality. Thus there were but 34,080 Spaniards, 32,383 French, 10,709 English, 5,860 Swiss, 4,997 Germans, 1,966 Portuguese, 834 Austrians, etc.

—Another Argentine railway in active process of completion starts from Rosario on the Paraná River, and already extends 250 miles to Córdoba, having for its objective point Jujuy, 585 miles further north (nearly on the Tropic of Capricorn) and about 100 miles from the Bolivian frontier. Col. Church's railroad around the rapids of the Madeira appears to have met with serious financial difficulties, from which it is to be hoped it may emerge. In a paper in the *Fortnightly Review* of three years ago he thus depicts the isolation from which Bolivia suffers for want of the natural outlet via the Madeira and Amazon. The rapid completion of the Peruvian trans-Andes railway, from Port Islay to Puno on Lake Titicaca, will soon change all this:

"A ton of goods leaves Europe for Cochabamba, the trade centre of Bolivia; it makes the stormy transit of Cape Horn, reaches the rocky coast of Peru, is landed in the surf, cut into small parcels for mule-back freighting, toils up the Andes to an elevation of 15,800 feet, (the highest peak of Mount Blanc is 15,700), which is the elevation of the pass of Tacora, descends to the Titicaca basin, crosses the

inland ridge of the Cordillera, and finally reaches its destination about five months after it has left Europe. The cost of this freighting is from £40 to £45 sterling per ton; but there is another charge to be added to this, for, in the meantime, it has paid a large profit to the merchants of Arica and Tacna, in Peru, who have built around them flourishing cities as a result, not to mention the colossal fortunes that have blessed the European houses which have quietly enjoyed the monopoly."

—The rapids of the Madeira are, as described by Col. Church, rocky obstructions found at intervals in the river, and are eighteen in number. They have a total fall of 228.41 feet, with a length of broken water of 64,505 feet. The total fall in the navigable stretches between them is 43.95 feet. This makes a total from the upper rapid of Guajará-Merim to the lower, called San Antonio, of 272.36 feet. The total length of river between these two points is 229.38 miles, of which 217 miles are of clear channel, perfectly navigable, with a depth of water from 10 to 120 feet in the dry season. The proposed railway to avoid the rapids will be only about 168 miles long, as it will cut off the curves of the rivers. Bolivian labor can be procured in abundance for this work, and "wherever it has been employed in Peru, or in the Brazilian lower Amazon, it has been found much superior to any other, unless taken from abroad." Indeed Col. Church is almost enthusiastic in his opinion of the Bolivian character:

"It is the Inca race, with its Spanish mixture, that now occupies this interesting country. The Quichua branch is the more numerous, and envelops the transplanted fraction of the Aymarás, which has its centre at La Paz, the northern capital of the country. The Quichua is, perhaps, the more docile and industrious. He is a great lover of agricultural pursuits, and clings to a little spot of ground with greater love for it than even the Anglo-Saxon. I have seen him at the snow-line of 15,000 feet, living in a miserable hut and barely finding the means to prolong his shivering existence. A half-mile down the mountain were smiling valleys to welcome him, but he preferred his home. He is eminently Pantheistic in his religion. Despite the long rule of the Spaniard and the efforts of the Catholic clergy, both Quichua and Aymará continue their Pantheistic ceremonies, and, in the main, attend mass for amusement. They have many peculiarities of intellectual power, and their blood, intermingled with that of the Spaniard, is producing a combination which is destined to have a

marked effect upon the future of South America. I have seen many of the Indian races of the Western Continent, from the head-waters of the Mississippi down through Mexico and South America to the Straits of Magellan, but none among them strike me as of such sturdy growth and talent as the Bolivian Quichuas and Aymarás. They have immense endurance, muscle, and courage. They would laugh at the European armies, which boast of a march of twenty-five miles in a day. Their infantry have often marched sixty miles for days in succession."

These people are very fertile. In 1826, the year following Bolivia's independence, she had a population of 997,427; in 1859 she had 1,950,000; and in 1869, the census of December indicated a total of about 2,750,000.

ASIA.—The *Japan Gazette*, in praising an order of the Daijo Kuan, which prohibits the cutting down of trees within the precincts of either Buddhist or Shinto shrines without express permission, goes on to say :

"We doubt whether there is a country in the world, even in tropical regions, that produces such remarkable variety, not only of useful and ornamental timber, but of really noble and beautiful trees. Some foreigners who consider their knowledge of Japan exhaustive after a few days spent in Tokei or the treaty ports, conclude that there are no very large trees in this country. It is from such persons that others abroad have formed the curious idea that the timber of Japan is usually of a stunted size, and that such articles as masts of ships, etc., cannot be obtained in Japan. If such impressions are not corrected by a careful examination of the groves of Uyeno and Shiba, those skeptical of Japan's abilities should visit the Hakone mountains, the mountains of Kadzusa, the table lands of Shinano and the numerous other timber tracts throughout the country. It may also be noticed that in Japanese theatres, where there are no supporting columns, the rafters are solid tree trunks of enormous length. The timber used in the castle gates of Tokei give us some idea of what the height of the trees must have been, by their girth."

—The connection of Japan by telegraph with the rest of the world lacks for Americans only one thing—a Yankee at the Japanese end of the wire, and an agent of the Associated Press at his elbow. This can not be had so long as foreign nations control the telegraph, and a message must pass through the hands of half-a-dozen operators speaking as many different languages. A Pacific cable is evidently among the necessities of the news-loving, commercial inhab-

itants of this country. The U. S. steamer *Tuscarora*, Commander George E. Belknap, is now exploring the Pacific bottom with a view to finding a favorable route for such a cable. The survey began in the vicinity of Puget Sound, and the harbor of Victoria, Vancouver's Island, was selected as the most favorable spot at which to land the cable. From that place the *Tuscarora* proceeded to the Aleutian Islands, and it is expected she will reach the island of Atka. It is not probable that much progress will be made in the survey this season, as the weather will soon be unfavorable for it. In that case the vessel will be employed until spring in getting the continental outline between San Francisco and the end of the California peninsula, sounding off and on shore until she ascertains the true ocean-bed. An experience will thus be obtained which will enable her to execute her orders with more certainty.

—The Oriental Topographical corps of New York, during their recent exploration in Palestine, inaugurated a system of forest and fruit tree planting, which promises to result in the setting out of several hundred thousand trees annually. George May Powell, of the expedition, in order to prove that pedestrian tours are practicable in that climate, made a journey from Jerusalem, via Nazareth and Mount Carmel, to Mount Lebanon on foot, in midsummer, and accomplished it without fatigue in twenty-four hours, which is less than the usual horseback time. Mr. Powell returns to the East about Christmas time, in company with an expedition at the head of which will be Prof. James Strong, of Drew Theological Seminary, chief of the Oriental Topographical corps.

OCEANICA.—The intrepid Dr. N. von Miklucho-Maclay, whose death in New Guinea had been reported, and for whom the Russian Government despatched the *Isumrud*, proved to be alive if not well, and greeted his countrymen on their arrival in Astrolabe Bay. This part of the coast appears to be especially dangerous on account of fevers, from which not only had the explorer been suffering (and nigh fatally), but which attacked violently the crew of the *Isumrud*, though the ship remained but five days in the bay,

prostrating 80 out of 200. This was the second vessel only that the Papuans had ever seen, the first being the *Viti-az*, which brought out Dr. Maclay two and a half years previously (1870). The fright occasioned by this floating, smoking monster drove the inhabitants to the mountains, and they could with difficulty be inspired with confidence. Dr. Maclay's position among them had been precarious enough during the five months preceding March of this year. Let alone the fever, and the death of one of his two servants, he had constantly to be on his guard against being murdered. He so conducted himself, however, as to make the savages firmly believe that he was a kind of god. He means to return to the island soon, but to another less malarious part of the coast. An Italian naturalist, D'Albertis, has also been forced to quit New Guinea on account of the fevers, and return to Europe, bearing with him a large collection of zoölogical specimens. His companion, Odoardo Beccari, remains, so that science is not to be without its witness.

—An interesting book has been published in German by F. Jagor, narrating his journeys in the Philippine Islands in the years 1859–1860. The account he gives of the state of society in Manila and its suburbs is anything but inviting. "Life in the city proper can scarcely be agreeable: pride, envy, place-hunting, caste-hatred, are the order of the day. The Spaniards deem themselves superior to their Creoles, who, in their turn, reproach them with coming to the colony only to eat their fill. The same hatred and the same grudge exist between the whites and the half-castes." It appears that cock-fighting is the great pastime of the population. In his twentieth chapter he describes some remarkable antiquities in the narrow San Francisco strait, which separates Samar and Leyte, a locality whose picturesqueness the author extols, questioning much "whether the ocean anywhere laves a spot of such rich and peculiar beauty."

"The remains referred to," says *Nature*, "are certain ancient scaraphagi found in cavities in a series of marble-like rocks situated near the eastern entrance to the straits, and in a few other remarkable localities. These rocks rise out at sea to a height of a hundred

feet. Their summits are dome-shaped, and their bases are much worn by the action of the sea. In these cavities the ancient Pintados, a race of tattooed Indians, and some other natives of the Archipelago, deposited the remains of their wives and elders as before adverted to. They placed them in carefully closed coffins along with the objects which in life they deemed most precious. Slaves were sacrificed at their burial, in order that they might not be without attendants in the next world. These spots were regarded with superstitious awe by the natives, who believed them to be haunted. A young Spanish clergyman led an expedition to some of the caves, and, after some religious ceremonies, wrecked the coffins, and turned their contents into the sea. The superstition still lingers about the rocks, although much weakened. The author had some difficulty in finding men resolute enough to accompany him on an expedition having a somewhat different object in view, that of bringing away some of the relics. He succeeded, however, and the trophies were deposited by him in the Zoölogical Museum of Berlin University."

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Cartography.—Kiepert's comparative maps of African geography, together with the accompanying letter-press, have been published separately as the first of a series on the progress of African discovery ("Beiträge zur Entdeckungsgeschichte Africa's"), and may be had of L. W. Schmidt, 24 Barclay street, New York. (See the October Notes.) Part II. will assign to each nation the credit for the share it has had in opening up Ethiopia. No. VIII. of Petermann's *Mittheilungen* for this year (July 29) contains an admirable map of English and American explorations in Baffin's Bay and Smith's Sound, including the results of the unfortunate *Polaris* expedition. The only change needed is in locating the spot at which the vessel broke away from her moorings and separated those on board from those on the ice. Part 15 of Stieler's Hand-Atlas has a map of the river and mountain systems of Germany, and two of Eastern Europe.

Photography.—November is not exactly the month one would choose for visiting Newport, in spite of what Mr. Higginson and Mr. Curtis before him have had to say of the winter delights of the place. But it is as good a time as any in which to study Newport through the stereoscope, reviewing the summer work there of the Messrs. Anthony's photographer. His series was not yet completed when we looked it over, and we may recur to it hereafter. For the

present we select the following views. Let us begin by advising any one who wants a perfect chart of Newport to send fifty cents to the office of the Coast Survey in Washington. It is on a scale of six inches to a mile, and is as minute and accurate as is all the work of that best department of our Government. It does not show the southern half of the Point; but all the city proper, the three principal beaches, the cliffs, and much more will be found delineated, with lines marking the comparative altitude of the surface.

Walking straight up from Long Wharf, at which the steamboat has landed him, the stranger on crossing Thames street finds himself confronted by the *State House*. The two views, 8347 and 8348, not only exhibit well this solid and honest old pile, and its elm-shaded park, but give us glimpses of side streets lined with houses which may easily be a hundred years old, and which are quite characteristic of this part of the town. The trees in these pictures offer fine studies of trunk forms. Continuing on till we strike Touro street, the very name reminds us of the days of Newport's greatest prosperity, for it commemorates one of those families of Jewish merchants whose dispersion (to Leicester, Boston, and elsewhere) was accounted one of the greatest losses caused by the British occupation of 1776-79. Here we observe the unpretentious *Jewish Synagogue*, No. 8356, and the gateway to the *Jewish Cemetery*, No. 8357. On the same great thoroughfare stands next in order the *Redwood Library*, No. 8355, also despoiled by the British. It is a cool resort in summer, and well adorned with statuary and paintings. In the view before us the shadow cast by the Doric portico seems to speak of July heat without, and of comfort within. Nearly opposite is Ward's simple and reposeful statue of *Commodore Perry*, shown from two points in Nos. 8360, 8361. This is not the hero of Lake Erie, but his brother Matthew Galbraith, whose part in opening Japan to Western civilization is duly celebrated in bronze on the circular base—a more than commonly successful design, by the way. Close by, the *Old Mill*, covered with ivy, deserves the enclosure which it has received from a perhaps too reverent municipality. Its pre-historic antiquity does not suggest itself to any one who observes the holes which once held the floor-beams of the second story, and, on the same level, a fire-place, of which the flue is built up within the wall. Norse or Anglo-American, it has passed into legend and poetry, and is, as we have said, worthy to be kept from harm. *Bailey's Beach* (not represented in the Coast Survey map) furnishes three views, Nos. 8312, 8314, and 8315—all showing some of the modern villas which have been built about it, and the rocky character of the shore.

Obituary.—On July 12th, died, in London, in his seventy-sixth year, Joseph Barclay Pentland, "the highly informed traveler," to use the words of Humboldt, "who, in his memorable expedition to Peru, 1827, first measured the mountains Illimani and Sorata, 21,290 feet,

and demonstrated that they were the highest peaks in America" ('Cosmos,' vol. i.). He was born in Ireland in 1797, and was early left an orphan. He was educated first at the school of Armagh and afterwards at the University of Paris, where he gained the approbation and friendship of Cuvier by the knowledge he displayed of comparative anatomy and other branches of science. His appointment, in 1827, by the British Government, as Secretary to the Consulate in Peru, gave him the opportunity for his exploration of the Andes above alluded to; he continued and completed his researches in 1836-39, when he was sent by Lord Palmerston as Consul-General to the Republic of Bolivia (La Paz). On this occasion he accomplished a complete survey of the vast mountain lake of Titicaca,—having an area of 2,222 square miles,—and his laboriously constructed map was engraved and published by the Admiralty in 1847. Since 1845 he had made Rome his winter residence, and was thoroughly acquainted with the topography and antiquities of that city, so that for many years he was editor of Murray's Handbooks for Rome and Italy. He aided Mr. Fergusson with his sketches of the antiquities of Cusco, and Mrs. Somerville with information on the geology of South America for her Physical Geography.

—A young Italian, Count Ferdinando dal Verone, only 27 years of age, died of fever at Zanzibar in the latter part of July. He was a native of Milan, and graduated as an engineer from the Paris *Ecole Centrale* at twenty-one. Three years were spent among the mines of Sardinia, whence he entered the employ of an English company working at Orenburg, Russia, as director. Here he remained two years, until drawn away from his proper work by reading of the doings of Stanley and Livingstone in Central Africa. It became his ambition to rival their performances, and he was on the eve of starting into the interior of the Continent when he fell a victim to the old enemy of African explorers.

—Were there any chain of lofty mountains stretching across China, it would have a regularity unknown in the present climate. Year after year, rain would be deposited on the southern slopes, while to the north there would be uncultivated deserts. Such is the case in India, and in a more marked degree in Persia. In China no large mass of mountains rises high enough to seriously affect the rainfall; and, in consequence, the limit to which the monsoon extends is defined by other circumstances. The result is an irregularity in the monsoon unknown in other countries, but this very irregularity generally has the curious result that, if certain districts suffer by an irregularity in the rainfall, others are sure to profit to an unwonted extent. On the whole, few countries are blessed with a climate better suited to agriculture.

CO-EDUCATION.

THE question of admitting women to Harvard has been discussed for some time. A daughter of Mrs. Livermore was rejected on account of her sex, and, at the Social Science Association, held at Boston shortly after, Mrs. Julia Ward Howe seized the opportunity to inform President Eliot that, in her opinion, he was possessed by the very "Satan of human society." The advocates of co-education have used quite enough of such argument, and it is therefore quite a pleasure to find a calm, sensible, report on the subject.

A committee of the Board of Overseers of the University was appointed to report upon co-education. Dr. James Freeman Clarke, who was chairman of the committee, prepared a report, the conclusions of which his colleagues were not prepared to subscribe to. Inasmuch as his official term in the Board of Overseers was on the point of expiring, and he was therefore debarred from taking any further steps in the matter, the other members of the committee readily agreed that his views should be published. He starts out with three propositions. 1. The friends of Harvard have daughters as well as sons. 2. They wish their daughters to have as good an education as possible. 3. They cannot obtain as good an education anywhere else as in Harvard University. The two former propositions are evident enough without discussion, upon the third opinions divide.

Dr. Clarke argues that Harvard has buildings, endowments, libraries, and all the necessary educational appliances, while her professors are men of great attainments and large experience. Since the elective system has been adopted, a certain number of teachers must be employed, and it makes no difference whether a class consists of two or twenty. Unless, then, good arguments can be adduced against the admission of girls to boys colleges, why should not these means of education be made to accomplish double the good which they do now? It is no argument against co-education that the other system has prevailed hitherto.

But the plan is not so new as we are apt to think, for it has been tried for a long time in the high and normal schools. Mr. David B. Hagar, now at the head of the Salem Normal School, says: "There are not many propositions to make in regard to education, concerning which I could speak very positively. But of one thing I am sure, that young men and young women study better, behave better, and are in every way benefited, by being together in the high schools." President White, of Cornell University, in a "Report to the Trustees of Cornell University," gives the same testimony. He says: "During many years, indeed during the greater part of the century, the education together of young men and young women of marriageable age, and coming from distant homes, has been going on all about us, in the academies and high schools of the State of New York and neighboring States, and not only have no evil results followed worthy to be taken into the account, but the system has worked so well, that it has come to be regarded as natural and normal.

"While this practical experiment has thus been going on for many years, under almost perfect freedom as regards boarding, lodging and social intercourse, with no well-watched quadrangles, no system of proctors to restrain the young men, or of matrons to guard the young women, the disputants on this question, on either side, appear to have been straining their eyes in looking deep down into the human consciousness or afar off into the universe at large, to solve a problem which their fathers and mothers and sons and daughters had done so much already to work out, nay, in whose solution they themselves had taken part.

"Among the letters giving results obtained in this field of experience, none certainly is entitled to greater weight than that of the Honorable Samuel B. Woolworth, for thirty-two years the successful Principal of some of the best academies in the State, and of one which, under his management, ranked in many respects the first. It should be added that this direct personal experience of Dr. Woolworth is supplemented by an experience of many years as Secretary of the Board of Regents of the State of New York—a position bringing him into most intimate relations with

every academy and high school in the State. His letter is as follows :

“ ‘All my experience in teaching has been in institutions to which persons of both sexes have been admitted—at Onondaga Academy six years—at Cortland Academy twenty-two years—at the State Normal School four years.

“ ‘I answer your questions *seriatim* :

“ ‘1. The co-education of the sexes has been favorable to good order and discipline.

“ ‘2. A mutual stimulating influence has been exerted on scholarship.

“ ‘3. There have been no scandals—at least not more than may exist between the members of a school limited to one sex, and the outside world.

“ ‘4. To most of the academies, and to all of the normal and union schools of the State, both sexes are admitted.’ ”

Principal Armstrong, of the Normal School at Fredonia, N. Y., says :

“ My observation shows that the morals of students of either sex deteriorate, apparently, in proportion to the rigor of the separation of the sexes. The same is true of their delicacy of feeling, their sense of honor, and their love of truth.

“ In all mixed seminaries and academies where social intercourse of the sexes was either forbidden or largely restrained, the ladies lost in prudence, delicacy, and truthfulness, even faster than the gentlemen.

“ For many years my views of school government have been much more liberal than the common practice would justify. In this Normal School I allow, and *even encourage*, all the freedom of intercourse between the sexes, which would be allowed in a well-regulated family. This has been tested for two years. The results are good in the recitation-room, where they mingle as they choose on the seats ; in the halls, where they communicate freely as at home ; in the boarding-places, where they have only the same restrictions. They visit, walk, and ride out together, out of recitation hours, whenever and wherever they please. The results are, they study better, are more polite, *visit far less*,

walk and ride together far less, than when restrained, and never under imprudent or objectionable circumstances.

"We have the most orderly, studious, and happy school I ever was in.

"In Genesee College the results were good, though the restrictions were too many to allow the best results.

"All my experience and observations have confirmed my earlier faith in the sense and virtues of the youth of the land, who attend our schools, of the necessity of the two sexes exerting reciprocally their influence upon their development, in order to obtain the best results, and of the fact that nine-tenths of all the irregularity and disorder in our colleges arises from the establishment of an arbitrary and unnatural state of society among the students."

More to the purpose, however, is the testimony from Michigan University. In 1870 the Regents voted to admit women, and in the academic year of 1870-71, there were about thirty-five lady students: eighteen in the Medical class, two in the Law-school, three in the Pharmacy class, and the remaining twelve in the Literary and Scientific departments. No scandals have come up, and the thing is now so settled that no one notices it. Dr. Clarke quotes the experience of many other institutions, but as their testimony coincides with that given above, it is not necessary to reproduce it. The objection made by some that matrimonial engagements would often be formed by students in a "mixed" college, is deserving of little consideration. Young men and young women who come together for study, learn to know each other much better than those who meet only in society, and if they did sometimes marry "out of their sphere," the real evil would probably be little.

Dr. Clarke says in conclusion:

"I think that this method is particularly applicable to Harvard University, because the system of elective study is already so largely adopted therein. In colleges where one course of study is the rule for all, that would necessarily be adapted to the male students, and might not be so suitable for women. But in Harvard they would have such large liberty of choice, that they might easily select a course suitable to them.

"Mr. White also informs me that in his opinion it would be easier to introduce this plan into colleges like Harvard and Yale, which are situated in large towns, where board could be found in private families, than in small places, where it would be necessary to erect boarding-houses for the young women, and then to watch them. In Cambridge they could take care of themselves.

"Whether the proper time has come for introducing this change at Cambridge I do not undertake to say; but I believe the system is good in itself—that it is in accordance with the ideas of modern society—that in practice it has worked very well, wherever tried; and that the sooner it can be introduced at Cambridge the better it will be for our excellent University."



WE borrow from the *Vossische Zeitung* the following interesting statistics with regard to the condition of education in the German Empire: There are throughout Germany 60,000 national schools, with six millions of pupils. About 150 scholars are reckoned to every 1,000 inhabitants. A higher proportion than this is to be found in Brunswick, Oldenburg, Saxony and Thuringia, and a lower one in Mecklenburg and Bavaria. There are 330 gymnasia in the German Empire, 214 pro-gymnasia, 14 "real" gymnasia and 483 "real" and higher burghal schools. The total sum of scholars at these "middle" schools amounts to 177,379. Of German universities there are no less than 20, with 1,624 teachers (Professors "ordinary" and extraordinary, *privat docenten*) and 15,557 students. Of polytechnical schools there are 10 (only 2 in Prussia), with 360 tutors and 5,428 scholars. A Prussian officer has lately endeavored to show, in a curious pamphlet, that the much-vaunted education of Prussian soldiers is little better than a myth. According to the experience of that gentleman, out of 40 recruits only 5 or 6 could read and write well; from 15 to 19 were "decent," while a dozen were very imperfectly educated.

RECENT GIFTS TO COLLEGES.

THE long list of those who merely in the past twenty-five years have manifested what we may almost call the American sense of the responsibility of riches—the Tappans, Astors, Peabodys, Coopers, Thayers, Sheffields, Vassars, Packers, Cornells, Stevensons, Simmonses, and Lenoxes (to select a few of the more prominent)—has since the opening of the year been signally increased. The generous givers thus named are perhaps even outranked in munificence by Mr. John Hopkins, of Baltimore, whose public endowments, present and prospective, will amount to between four and five million of dollars. A university with scholarships for the poor he has already taken steps to organize by the appointment of trustees, by the gift of his Clifton estate of four hundred acres, and by setting apart in his will for this object his entire interest in the Baltimore and Ohio Railroad. Still more recently he conveyed to other trustees two million dollars, with which to erect and maintain a hospital in the city of Baltimore for the indigent sick of the city and its environs “without regard to sex, age, or color;” a training-school for nurses in connection with it—these two institutions to form a part of the medical school of the future university; and in the country an orphans’ home with accommodation for three or four hundred colored children, and due provision for their maintenance and education. These deeds speak for themselves, but it should be added that Mr. Hopkins’s instructions are, like his intentions, of the most liberal character, and that he and every one of his trustees are Southern men by birth and life-long residence. Commodore Vanderbilt, too, apparently not unwilling to be Drew’s rival in dispensing as in making money, has been giving liberally—more liberally perhaps than wisely—to sectarian seminaries in Tennessee and on Staten Island, parting it is said with a million of dollars. The University of California, under President Gilman’s new régime, is also stimulating the generosity of the Pacific coast and receiving significant donations of land and money for professorships, books, collections, etc. And finally, as taking

effect during the present year, we may allude to the late Edwin Forrest's foundation of a home for decayed actors in Philadelphia, in a park of sixty acres.—*Nation*.

TO FATHERS AND MOTHERS.

IT is an interesting fact that, simultaneously with the life of our country, there grew into life, in Europe, a man who seemed born on purpose to give to the world a theory of education, and to elaborate an art of it, exactly in the spirit of our Constitution: the first ever made, unless it were the Hebrew, to prevent the few from dominating the many, and to inspire all the people freely to enter upon the truly human work of dominating outside nature in the spirit of fraternal help.

Freidrich Froebel was born in 1782, the year after our revolutionary war was crowned by victory; and the year before our independence was duly acknowledged by Great Britain. He grew up with a painful childish experience of his own, though by no means a very uncommon one, while the great world around him was rushing into the vortex of the French Revolution; and lived through the Revival of Education in Europe, in the early part of this century, which kindled him into an Educational Reformer. But the memoirs we have of him, from the pens of himself and his friends, show that he owed less even to Fichte, Pestalozzi, Diesterweg, and the other eminent educators, who have illustrated the nineteenth century, than to his own wonderful sensibility and genius.

The art of kindergartening (child-culture) was his invention. He meant by it, taking children from the mother's arms in the twilight of their intellectual consciousness, and, in the spirit of the wise mother's method, cultivating them as living organisms, not drilling them as stones, or moulding them as clay; but first teaching them to trust, to hope, and to love, by presenting to these natural instincts of their hearts their proper objects in the living persons of their parents, brothers, sisters, and other genial companions, with whom

they may exchange all the sweet courtesies of life in their childish plays; at the same time that their understandings are very gradually developed to know the nature and life to which they are born heirs. This last is done by giving them opportunity to act upon nature immediately around them; to produce effects within the compass of their childish fancy and affection, exercising their powers of sense, locomotion, and manipulation upon playthings, given in such order, and so easy to use, that the knocking down and tearing up to which all children are prompted, by the instinct of self-activity, in order to prove themselves powers, shall be replaced with little productions of their own, which shall react on themselves to produce attention and examination, and knowledge of order and law, as well as real pleasure, (which is the best moral atmosphere for children; and which they, unconsciously, vainly seek for in the unguided, disorderly play of ignorance.)

The kindergarten era stretches for three or four years between the nursery and the primary school time: admitting more formal discipline than the nursery, but less than is indispensable for the primary schools, for instruction in reading and elementary science. And it requires a peculiar class of teachers, who unite the tenderness of the mother with a philosophical insight into the nature of childhood, in that pre-intellectual era when irresponsibility is just beginning to yield to the growing moral sense. Its teachers must have made themselves adepts in Froebel's method of sharpening the five senses, and training the limbs, especially the hands, to artistic processes, with genial conversations that lead the children to think, invent, and especially to speak and understand their mother-tongue with precision and intelligence.

To obtain such a class of teachers, it is necessary for parents first to make themselves acquainted with Froebel's art and science; and secondly to support with their money and personal sympathy kindergartens with properly trained teachers.

To promote these objects, therefore, the Kindergarten Association of Boston proposes that parents all over the country shall form, in their own neighborhoods, simple unions, to meet at least once a month, for the purpose of

reading and conversing with each other on the subject of kindergartening; being quite sure if they do so, that they will very soon be prompted to do all that is requisite to have kindergartens for their own and their neighbors' children at once, and to support the teacher whom they shall procure, with all the necessary means for her success.

Already one such union has been spontaneously formed in the town of Montclair, New Jersey, whose members meet once a fortnight to read and converse. They began, as any other union can do, with procuring from the National Bureau of Education its Circular of Information on Kindergartens, for July, 1872, containing the Baroness Marenholtz Bulow's statement of what a true kindergarten is. The Commissioner, General Eaton, will send this pamphlet for the asking, without price.

The Montclair Union has already procured and supports a kindergartner who meets with the mothers to read kindergarten literature, and with whom they converse and sympathise. It has proved a complete success, and continues to be more and more interesting to the members. The grown daughters of the members also visit the kindergarten, and find it delightful to assist under the direction of the kindergartner, who thus is enabled to enlarge her numbers, while they are obtaining the highest touch of culture for future motherhood and general womanly influence in society.

We close by giving the hint of a Constitution.

Whereas, we deem it indispensable that all children, between the ages of three and seven, be prepared, by kindergartening, for the schools of instruction provided for them by the State, in order that the latter may attain their objects; and, whereas, kindergartening must be based upon the science of child-nature, which is not intuitive; the undersigned parents and friends of children organize themselves into a social union, to meet at least as often as once a month, for the purpose of reading and conversing upon all subjects pertaining to Froebel's art and science, beginning with the Circular of Information published by the National Bureau for July, 1872.

The meeting shall be as informal as is consistent with order and comfort, the President of the union being chosen

to act as Chairman, and open the meetings with a statement of what is the subject of the reading or discussion of the day.

A Secretary may also be appointed whose duty it shall be to make some report of each meeting to the one following; and by and by to correspond with the Boston Kindergarten Association, which hopes, in the course of the summer, to start a monthly periodical, to be edited by Miss E. P. Peabody, the first number of which will be sent to any union that will make known its existence to the Association.

This monthly will afford themes for the conversations of the unions, and contain, among other things, Miss Peabody's lectures of the past winter. The continuation of the publication, however, will depend upon the success of the subscription for it.

This letter is written by the order of the Boston Kindergarten Association, given at their meeting of March 22, 1873.—*Elizabeth P. Peabody.*

CREAM OF THE EDUCATIONAL MONTHLIES.

A TIMELY article on "Literature for Children" will be found in *Home and School*. So many books with morals, and with scientific talk thinly disguised, have lately been published, that there is danger of their crowding out the standard children's books, such as Robinson Crusoe, and the Arabian Nights. The children who read these "books with a purpose" may have correct opinions, adopted from other people, about force, or electricity, but at their time of life originality is of more importance than correctness. We do not want moralizing or scientific children, but childish children. Fairy tales rivet the attention and strengthen the realizing power by which the mind retains whatever is read, and these, and books like *The Young Marooners*, and *Robinson Crusoe*, are the best preparation for future serious study. *Finishing her Education*, *A Dominie's Talk with his Pupils*, and *Boys*, are well worth reading. The charade, *Home and School*, is a disconnected

play, containing stale newspaper jokes, the purpose apparently being to advertise the journal in which it appears.

The fault of spending too much time in preparing for examinations, and the tricks resorted to, to make a good show, are discussed in the *Kansas Educational Journal*. The desire to have the children recite well, is stronger than that of having them thoroughly instructed. The blame for this lies partly with parents, who think that there is some defect in the teaching if their prodigies do not astonish by the profundity of their learning in reading, writing, and arithmetic; and partly with the teacher, who sacrifices the sense of duty, to the desire for praise. This making a good show involves petty deceptions in the way of reciting old, well drilled, lessons, when visitors come, and not infrequently direct lying, by both teacher and pupil. The effect upon children is most injurious, for it teaches them to substitute sham for reality, and blunts their moral sense. After all, an honest child blundering through a recitation is much better than a cheat who recites glibly, if parents could only be made to think so. There are other "errors" spoken of which we have not space to notice. The *Journal* contains some good selected articles, but little original worthy of notice.

The Massachusetts Teacher has a word to say about translation as a means of mental growth, and deprecates the literalness and inelegance generally heard in the school-room. When pupils have attained some little knowledge of a language, they should be encouraged to find out the exact ideas intended to be expressed, and then render them into idiomatic English. This is more useful than the literal translation of each word. The blame of the present system rests with the teacher, and is the result of a conscientious desire to be sure that the pupil understands the meaning of the words, and that he has not depended upon a "pony" in preparing his recitation. What might be lost in accuracy by a less literal rendering, would be more than made up by the enlargement of ideas, and an increased power in using language. But accuracy need not be sacrificed, for a few questions would readily determine whether the pupil were able to give exact equivalents for foreign words. "French in

High Schools," also receives attention. The writer argues, and we think justly, that the vast majority never need to speak French, and that the time spent in trying to accomplish that might better be employed in gaining acquaintance with French literature. "Reminiscences of Boston Schools Forty-five years ago," is an interesting paper, which we are glad to see will be continued.

A communication from "Meadville" in the July number of the *Pennsylvania School Journal* has called forth a "Replication" from S. J. S. It is not strictly speaking a reply, for the original article was intended to prove that religious instruction is not neglected in the public schools. S. J. S. assumes the truth of this statement, and argues that such instruction is a wrong to those with whose convictions it does not agree. The arguments advanced are the old ones so often used in the discussion of the question of Bible reading in the public schools. Romanists and Jews are as earnest in their beliefs as are Protestants, and it does not seem just that when they pay so large a share of the school-tax, they should not have the right to keep their children from being taught what they honestly conceive to be error. S. J. S. does not wish to do away with instruction in religion, but thinks it should be confided to the church and Sunday-school. The arguments advanced are worthy of consideration. The right is on the side of the Protestants, where the right is, is an open question. "Aesthetic Culture," "Normal Development," and "Bible Reading," are among the other subjects discussed in the *Journal*.

THE marked success of the English school ships for the young Arabs of the streets causes the *Boston Journal* to regret the failure of the experiment made by Massachusetts. That paper states that it has always thought that the failure was attributable to bad management rather than inherent obstacles in the general idea. The material for hardy seamen was at hand, but the skill to control, instruct, and mould was lacking.

EDUCATIONAL INTELLIGENCE.

INDIANA.—The State Board of Education has determined upon readjusting and modifying to whatever extent may appear to be necessary the course of study in the public schools, so as to make it one continuous system, from the lowest primary grade up to and through the State University. From the primary grades to the high schools the system does not appear, in their opinion, to need adjusting. Not so, however, between the high school and the University, the relationship between them needing some modification to bring them in perfect working accord and harmony. One noticeable feature of the new system is to be found in a provision which makes a certificate from certain designated high schools, showing that the bearer has satisfactorily passed through their course, a sufficient showing of proper preparation, without further examination, to enter the University.

MASSACHUSETTS.—MONSON.—The State Primary School closed the first year of its independent existence Oct. 1st, with sixty more pupils than it had a year ago, the number now reaching 400. Last year there were 148 newcomers, but this year there are nearly 200. The increase in numbers results from the working of the visiting agency act, the courts sending vagrant children to school.

MICHIGAN.—DETROIT.—The schools are so crowded that the Superintendent has been obliged to open half-day schools. One division is taught in the morning and another in the afternoon. The success of these schools will help solve the problem as to the proper length of school hours.

LANSING.—The report of attendance at school is 92 per cent. of the average number belonging. During the year a special teacher of drawing has been employed, but hereafter drawing will be required to obtain an ordinary teacher's certificate.

NEW MEXICO.—The Secretary of the Territory writes that a substantial start has been made in educational matters. In every county the school machinery is ready, and

only waits legislative action to set it in motion. The native population is becoming alive to the necessity of education, and the Secretary predicts, that, in a few years, New Mexico will stand well up in the educational ranks. He is about to issue circulars asking for statistics, and other information, upon which to base intelligent action in establishing schools.

OHIO.—CINCINNATI.—The question of continuing instruction in German in the public schools is seriously discussed, the complaint against it being the expense it entails. The Board has virtually declared itself bankrupt. At its last meeting the state of affairs was fully reviewed, but the question was postponed for future decision. When it was taken up again the school year was about to commence, and it was deemed advisable to leave matters *in statu quo*.

TENNESSEE.—The working of the new school-law surpasses the most sanguine hopes of its friends. Its influence is felt in every county, and it is a most encouraging fact that the people heartily support the authorities in their efforts to improve the schools. At a Superintendents' meeting recently held in Knoxville, much enthusiasm was displayed and a resolution evinced to make the Tennessee schools equal to the best. The Superintendents are spoken of as men of clear ideas and much executive ability.

CURRENT PUBLICATIONS.

FOR a long time the correct mode of pronouncing Latin has been under discussion, the English and Continental systems both having their partisans. The former certainly had the advantage in point of consistency, for it follows entirely our manner of pronouncing, while the latter, although pretending to give the sounds used by the Romans, formed a system which was neither flesh nor fish. Still the Continental system sounded more pleasant, perhaps because we were taught to use it, but we well remember how awkwardly it sounded to hear a new pupil, whom we thought brought up

in outer darkness, go through *amo* in the English style.—Especially were our sensibilities shocked when he came to *amavi*, which he pronounced, aye-mav-eye. We suspect, however, that his system was more logical than ours, for he did what he pretended to, and we, claiming to speak like “antique Romans,” did not. For many years Latin scholars have endeavored to introduce the real Roman pronunciation, since comparative philology has settled many doubtful points, and has enabled us to closely approximate our system to that of the Romans. These principles were enunciated by the Syllabus of Latin Pronunciation recently prepared by the Latin professors of Cambridge and Oxford, and their views have been accepted by some of the former Latin scholars of our country.

The adoption of this system is one of the features of a grammar lately published.¹ To change the present style of pronunciation will of course be a very slow process, because, with all respect to our Latin professors, it is hard to “teach an old dog new tricks.” Yet, if the leading colleges adopt the old Roman style, the smaller institutions will soon follow, and the movement will gradually work down to the schools. Another new departure in this grammar is the arrangement of its parts. The verb is the basis of the sentence; it is, in fact, what its very name indicates, *the* word. Logically it should be treated first. There is little gained, though nothing is lost, by this change. There are a few things which the pupil has to learn all at once, or at first. Until these are comprehended he is a mere machine learning facts, but afterwards he can see the reason of things and studies in a rational way. These first things are a general knowledge of the parts of speech. Inflection of the verb is arranged with reference to the character of the stem; the vowel stems of verbs are treated in regular succession as A, E and I verbs. U and consonant verbs are classed by themselves. Another departure from the usual method is found in the treatment of Syntax. Instead of learning rules first and then applying them in sentences, the pupil studies sentences, and thus discovers the rules. This plan is theoretically better than the

¹ A GRAMMAR OF THE LATIN LANGUAGE, by G. K. Bartholomew. Wilson, Hinkle & Co., New-York and Cincinnati.

old one, but we doubt its practicability. Boys beginning Latin are not apt to evolve rules from observing sentences. The old system has, we think, the advantage in time, and is fully as accurate. In this matter much depends upon the teacher. These are the principal points in which this grammar differs from those which have preceded it. The author has taught Latin for a long time, and his book embodies the results of his experience. It is practical in a good degree, and we think it will prove useful.

MR. E. STEIGER has published a new German series based upon Ahn's system. It consists of a first and second book, which are also bound in one volume, a key containing exercises in reading and translating, and a small reading chart. Ahn's system has been so long before the public, that it is unnecessary to discuss it here. In this new series there is ambiguity in some of the explanations, as for instance on page 6 of the First German Book, where, in reference to the use of the long and short *s*, the author says: "The long *s* is used in the beginning and middle of words; the short *s* only at the end of a word, or part of a word." By "part of a word" is meant a component part of a compound word, but from the above quotation any syllable would be understood. There are, too, a few typographical errors, as on page 26 of the same book we find "*c* is pronounced like *s*, etc.," when it should be "*c* is pronounced, etc." But these latter errors will undoubtedly be corrected in a new edition. The books before us are simple and well graded; they are not calculated to advance the pupil rapidly, but they are thorough. Those who like Ahn's system will find them valuable for elementary instruction.

THE ANABASIS has been edited by so many of our best Greek scholars, that there would seem to be little need of a new edition. One has, however, just been issued by Sheldon and Company, the excellence of which fully justifies its publication. The accuracy of the text we take for granted from the reputation of the editor, A. C. Kendrick, LL.D., of the University of Rochester. A map drawn by Kiepert shows the route of the Ten Thousand, and a table of dates, distances, etc, taken from the small edition of Macmichael,

serves as a table of contents and an index. The notes are designed to aid the student in comprehending the construction of the language, and not merely to aid in translation. The type is clear, a great thing in Greek. Altogether it strikes us as a welcome addition to our list of school books.

JOHN WILEY & SON have published an edition of Cæsar, of which the distinctive characteristic is its *ordo*; the Latin arranged in the English order. It is placed at the end of the book, and is designed to assist the student in the preparation of the lesson. The idea of such an *ordo* strikes us as radically wrong. If a pupil is to learn Latin, we do not see why he should not study it as it really is, and not as rearranged. It would be much the same as if a German should have his English placed in the German order and say, "I will you a nice story tell if you quiet are." The whole idea of this book seems to be to help the student to find out the meaning of the words, and not to understand the construction. The notes are arranged upon the same principle. The tendency of such a book is to substitute superficial for thorough knowledge, and we would be very sorry to see its principles generally adopted.

THE ANCIENT HEBREWS, by Abraham Mills, A.M., recounts the career of that nation from the calling of Abraham to the dispersion of the Jews. For authorities the author relies principally upon the Bible, but for the latter five hundred years of the history, upon the writings of Josephus of Jerusalem, and Philo of Alexandria. Being a compendium of ancient sacred history, this book will be particularly acceptable to those engaged in religious study or instruction. It is well written, and the author may be said to have accomplished his aim—"to blend the most solemn and impressive lessons of instruction with the pleasures and advantages of historical information."

WILSON, HINKLE & CO. have published a good collection of plays for schools, entitled, "The School Stage." The pieces are such as can easily be acted, and the requirements in the way of properties are within the reach of any school. The tone of the selections is healthful, and the humor is free from buffoonery.

MISCELLANEA.

PROF. TAYLER LEWIS is to deliver a course of lectures the coming winter before the students of Rutgers College and the Theological Seminary at New Brunswick, on the subject of "Modern Infidelity." This lectureship was founded by the late Mr. Vedder, of Utica, N. Y., and a course of lectures is to be delivered annually hereafter on some subject kindred to that assigned for the present year.

THE "Skolski Prijately" and the "Srbskanarodna Skola" are the names of two Croatian educational journals.

THE class just entered at Cornell is much larger than either of the two preceding it. It numbers 200; 18 of whom enter on certificates from other colleges, 15 are Brazilians, and 15 are ladies, the number of feminine students being thus increased to 31.

WILSON, the vocalist, was upset in his carriage near Edinburgh. A Scotch paper, after recording the accident, said: "We are happy to state that he was able to appear on the following evening in three pieces."

THE *Maine Journal of Education* keeps up with the times. The October number informs its readers that "Prof. David Murray, of Rutgers College, New Brunswick, N. J., sailed from San Francisco, May 21st, for Japan."

SECRETARY BELKNAP, it is stated, has engaged James Parton, the historian, to arrange for the publication of the original manuscript papers of General Washington, which recently came into the possession of the War Department. Among the papers is the original book used by General Washington when he was in command of the army in the field.

A YOUNG German savant, Dr. Strack, at present at St. Petersburg, has been charged by the Russian government to collate the valuable manuscripts of the Old Testament preserved in the library of that city. He has the intention of photographing and publishing, with annotations, the most interesting of these documents.

AMERICAN EDUCATIONAL MONTHLY.

DECEMBER, 1873.

*UNION SCHOOLS.**

THE greatest need of the common schools of this country is a well-organized system of instruction. It is obvious to every one that a course of study adapted to the capacity of the more advanced pupils cannot be successfully pursued by the primary classes; and it ought to be just as obvious that the system of discipline, and the methods of imparting instruction in the two cases, should be different. Educators have long since demonstrated that certain fixed principles, both of instruction and discipline, are adapted to the different ages and development of pupils; and they have shown that a philosophical system of education will recognize these differences, and apply the principles in the arrangement of schools and in the construction of school-houses.



When pupils of all ages and states of advancement are

* From *Johonnot's new work on "School-Houses."*

brought together into one room for the purposes of education, as in our ordinary district schools, the work of instruction is very imperfectly performed. The quietness and attention to study necessary to the progress and highest success of an advanced school cannot be enforced in primary classes without seriously injuring the pupils, both physically and mentally; and conversely, the frequent change of position and noise incident thereon, indispensable to primary classes, cannot be permitted in a more advanced school without a relaxation of discipline and an interference with study incompatible with its highest interests.

Again, the kind of instruction and the methods of imparting it are essentially different in the two cases. With primary classes the instruction should be confined principally to the elements of science objectively presented, and made interesting by appealing directly to the senses. The subject of instruction should be gradually developed, and the lessons principally oral. In the higher schools this system is changed. The primary knowledge having been gained, the expanding minds instinctively seek generalizations and principles. This requires quiet for thought, study, and reflection; and this quiet is not attainable in a room when primary instruction is properly going on. Our schools can never reach their highest state until these two incompatible states of discipline and instruction are finally and effectively separated.

Among the other faults of ungraded schools may be enumerated the following:—"1st. The difficulty of having the school-room properly seated so as to accommodate all sizes of pupils. 2d. The great range of studies necessary to be pursued at the same time, rendering it difficult for the teacher to reach a high degree of excellence in the teaching of any. 3d. The great number of classes, allowing the teacher an entirely inadequate portion of time to each, and causing him to hurry from one to the other so rapidly that he cannot do justice to any. 4th. The confused and desultory manner in which instruction is carried on renders the school unattractive both to pupil and parent, and, consequently, there is little interest manifested in its welfare.

These difficulties will never be entirely removed until our

schools are graded, and there has been developed and applied a complete and thorough system of instruction. This system should embrace, substantially, the whole course now pursued in our common schools, academies, and colleges, open to all, but allowing each individual to take only such portions of the advanced course as suits his inclination and circumstances. The application of the different portions of this system to the different grades of schools, and the nice adaptation of its progressive parts, are problems which demand the highest wisdom combined with the largest experience; but when once solved, they will be of incalculable benefit to education everywhere.

When such a system of instruction becomes established, the schools must be more efficient, and pupils will advance with greater rapidity. Teachers will not be left in doubt as to what course to pursue; for a specific work, arranged for each term and year, must be accomplished. Teaching will progress according to well-defined principles, instead of being left to individual caprice. The gradation, thorough system, and division of labor, will effect a saving of time equal to one-half of the entire period now allotted to the school-room, thereby doubling the educational advantages of our children. The means of a liberal education will be brought within the reach of all, at a cost but little greater than that of our present imperfect and inefficient course.

A full enumeration of the advantages of the proposed improvements, and of the changes necessary to effect it, would fill a volume. A very brief view of the main features of the system, as far as they relate to the general organization of schools and the building of school-houses, is all that we need attempt here.

PRIMARY SCHOOLS.—Primary Schools should embrace a five years' course of study, extending from the age of five to ten years, with pupils of the average ability. They should take the place of the present District Schools, and be brought within the reach of every home in the land. The instruction should proceed in a regular course, and the pupils should be advanced, year by year, into higher classes, until the whole five years' course is thoroughly mastered.

INTERMEDIATE SCHOOLS.—Intermediate Schools should embrace a four years' course of study, continuing the work of instruction to the age of fourteen. They should be made up of a sufficient number of pupils from the Primary Schools to furnish the requisite number of a proper grade. The instruction here should be systematic, and the pupils advanced, year by year, as in the Primary Schools. The course of study in these schools would be about the same as that now pursued in our academies and in the higher classes of our common schools.

HIGH SCHOOLS.—High Schools should embrace a four years' course, carrying on instruction to the age of eighteen. Such schools might be composed of the pupils from a dozen or more intermediate districts. The instruction in these schools would be equivalent to that of our ordinary colleges, though perhaps of a more immediately practical character. This would complete the system of strictly public schools, though, beyond them, those of a special character would be established,—all necessary to the perfect development of a scheme of National education. Prominent among these would be the following :

THE UNIVERSITY.—The University should be devoted to professional instruction in the departments of Science, Language, General Literature, Law, Medicine, and Divinity. It should be the crowning glory of all, carrying instruction to the highest point attainable in our present civilization, and elevating civilization itself. It should present the golden opportunity to the scholar in pursuit of the highest culture, and prove the perpetual fountain from which knowledge would flow downward through all the grades of schools, until it reaches every inhabitant of the land, and elevates humanity to a higher level. The graduates of the University would naturally become the teachers of the High Schools, and from these last would come the great mass of the teachers of the Intermediate and Primary Schools.

NORMAL SCHOOLS.—Normal Schools, for the professional instruction of teachers, would find their appropriate place. Such persons only as had mastered the High School course

should be admitted to the Normal Schools, and the two or three years spent in them should be devoted to the examination of the laws which underlie all systems of instruction, and the best methods of putting in practice the principles so developed. Then teaching would no longer be left to the caprice of ignorance, but would be intelligently and systematically carried on by persons masters of their profession.

WORK SCHOOLS.—All pupils should be obliged to take the course marked out for Primary and Intermediate Schools, but beyond this, entire freedom might be allowed. The great mass of pupils would probably not wish to obtain a liberal education, and would desire immediate entrance into some branch of industry. For the accommodation of this class, Work Schools should be established, in which they could obtain a knowledge of the fundamental principles of the business in which they are to be engaged. These Work Schools would include Mechanical, Agricultural, Mercantile, Manufactures, and Mining Schools, Schools of Design, etc.

When this system of graded schools becomes the ruling policy, and there shall be established Professional and Work Schools to perfect it; when all these are consolidated and crystallized into a great national system, reaching from ocean to ocean, and so ubiquitous and Argus-eyed that no child in the Republic can evade its sight or escape its influence; then will labor, organized into system, be respected and honored by all men; then will each individual have the opportunity and all the necessary aids to secure the development of his peculiar talent in the direction that nature designed; and then we may expect a higher and more beneficent civilization.

In cities, villages, and the more thickly populated portions of the country, the systematic gradation of schools can be easily adopted, and the great advantages arising therefrom at once secured. Indeed, the system is now substantially adopted in most of our larger cities. In the more sparsely settled portions of the country it is difficult to establish any general system that is entirely unobjectionable; but even

there, a steady policy of consolidating districts instead of dividing them would be beneficial, while the entire benefits of graded schools might be realized by the abolishment of districts and the substitution therefor of town schools.

Where the gradation of schools has been established, two or more grades are often united in one building, under the distinctive name of "Union Schools;" and Union School-houses have become one of the "institutions" of the land. These houses, of necessity, must be larger and more costly than the common District School-houses; yet the cost must be far less than the aggregate cost of several separate houses affording the same accommodations. The lot, out-buildings, and general surroundings of a Union School-house will cost no more than those belonging to each of the smaller houses; so the argument, on the score of economy, is entirely in favor of Union School-houses.

The comparison is sometimes made between the cost of a large, well built, and commodious Union School-house, possessing all the modern improvements, and that of several of the old-fashioned, ill-constructed, and miserably-furnished houses, where children were packed almost to suffocation, and the balance has been in favor of the latter; but it is unnecessary to say that such a comparison is one-sided and unfair, and that to make it of any value, the same conditions must be preserved in the two cases.

In Massachusetts, where the old system of independent districts has been in operation for nearly two centuries, the schools of each town have recently been consolidated into a Union district with its primary, intermediate, and high schools. The result of the experiment has been satisfactory in the extreme. A genuine educational revival has taken place. Much more attention is paid to schools on the part of communities, a constant demand is made for better qualified teachers, and large numbers of new and improved school-houses have been erected. All parties interested unite in commendation of the new system, as greatly superior to the old in efficiency and in the economic expenditure of money.

[In our next we shall present suitable designs for Union School-houses.]

ERRORS IN THE USE OF PREPOSITIONS.

IV.—MISAPPLICATIONS.

IN a previous number of this series of articles we had occasion to refer to the fact that certain words followed by a preposition are used in one sense, while, in order to express a different meaning, the same words need sometimes to be followed by an additional preposition; as, "to go through"—"to go through with." There are also words that are used with one preposition in one sense, and with another in another; so that, in order to express the meaning intended, it is important to employ the preposition idiomatically appropriated or conventionally assigned to that duty. In these cases, however, a misapplication of prepositions is no uncommon thing. We propose to note merely a few instances of this nature.

The verb *abound* has two meanings: 1. To be abundant; and 2. To overflow, or be abundantly supplied. In the former sense, when followed by a preposition, that preposition is usually *in* or *on*, denoting where the thing spoken of abounds. Examples: "Gold abounds *in* California."

" *In* thee

Love hath abounded more than glory abounds."

In the other sense the proper preposition to be used is *with*. Examples:

"The Romans abounded *with* little honorary rewards."—*Addison, Guardian*.

"The letter abounds *with* the spirit of mirth and good humor."—*Steele, Spectator*.

"Their country abounds *with* elephants."—*Harper's Magazine*, Vol. xxiii.

"The path to bliss abounds *with* many a snare."—*Cowper*.

"And *with* brave spirits France ne'er did more abound."—*Drayton*.

Yet many, and among them the best of writers, do not scruple to use *in*, in this case, rather than *with*. "He abounds *in* several frugal maxims."—*Steele, Spectator*. (Steele uses *in* or *with* indiscriminately.) "This country does not

abound *in* characters like theirs.”—*Junius*. Indeed, we are not sure that “abound in” is not more commonly used by all classes of writers and speakers than “abound with.” Yet none of these writers would say instead, “be abundantly supplied *in*,” “be abundantly possessed *in*,” or “overflow *in*.” *With* is the word that would be used here. So, properly speaking, we should say “The book abounds *with* beauties;” “This country does not abound *with* characters like theirs;” “Well may his heart *with* joy and bliss abound;” etc.

Among the meanings of the transitive verb *compare* are these two: 1. To liken, for the purpose of illustration; and 2. To measure with respect to resemblances. In the former sense the word is used to bring into comparison things of different kinds or natures, and is properly followed by *to*; as, “Solon compared the *people* *TO* the *sea*, and *orators* and *counsellors* *TO* the winds.” That is, he likened them, for illustration, *to* the sea—*to* the winds. In the other sense, *compare* is used in drawing resemblances between things of a similar kind or nature, and should be followed by *with*. Examples: “A well-written *book*, compared *WITH* its *rivals* and *antagonists*, is like Moses’ serpent.”—*Addison, Spectator*. “The *number* of those who suffer by his personal vices is small when compared *WITH* the *number* of those to whom his talents are a source of gratification.”—*Macaulay, Miscel.* “It is possible for their integrity to be degraded to a *condition* so vile that, compared *WITH* it, the present estimation they stand in is a *state* of honor and respect.”—*Junius*.

“This *earth*, a spot, a grain,
An atom, *WITH* the *firmament* compared
And all her numbered *stars*.”—*Milton*.

Yet, when used in this sense, *compare* is not unfrequently erroneously coupled with *to*: “His power is that of a parish beadle compared *to* mine.”—*A. R. Hope*. “I found I had run it over as a matter of form in comparison *to* the manner in which I then discharged it.”—*Steel, Spect.* *To*, in these and similar instances, should be *with*—“compared with”—“in comparison with.”

Among the meanings commonly given to the verb *consist* are these three: 1. To be compatible, to agree; 2. To be

comprised; and 3. To be composed. In the first of these senses, it should be followed by *with*; in the second by *in*; and in the third by *of*. Examples:

1. "It cannot consist *with* a liberal spirit."—*Junius*.

"Orders and degrees
Jar not *with* liberty, but well consist."—*Milton*.

2. "We do not know *in* what reason and instinct consist."

—*Dr. Johnson*.

"If monarchy consist *in* such base things,
Sighing, I say again, I pity kings."—*Cowper*.

3. "An immense proportion of its vocabulary consists either of simple primitives or of words obviously drawn by composition or derivation from radicals still existing."—*G. P. Marsh*. "Only the principal compositions of which it consists are enumerated."—*G. L. Craik*. "This world, of heaven and earth consisting."—*Milton*.

In the use of this word, however, in the second and third of these senses, the preposition is not unfrequently misapplied. The following examples will afford illustrations of this. The Hon. Joseph Holt, in an address delivered in this city about twelve years ago, is reported to have said, "*On* this unity of a country and a government and a people consists at once our greatness and our happiness."—*N. Y. Times*, Sept. 3, 1861. To say nothing of the misuse of *consists* for *consist*, the word *on* here may be merely a misprint for *in*, or it may have been spoken with reference to being followed by *depend*, which in the excitement of the occasion might easily have been lost sight of and given up for *consists*. Again: "Spoken language consists *in* sounds which [that] are signs of ideas."—*Clark, First Less. in Gram.* The error in this example of course consists in using *in* for *of*, inasmuch as the reference is not to some substance, nature, act, or fact in which the thing spoken of is supposed to lie or consist, but to the parts of which it is regarded as made up.

Differ is another of these words which should be followed by different prepositions, according to the use that is made of it. In reference to properties—form, size, color, age, height, etc.—objects are spoken of as differing *from* each other; as, "One star differeth *from* another star in glory;" "How the hero differs *from* the brute!" But, when used in the sense of "disagree," or with reference to a difference

of opinion, *differ*, like the word *disagree*, idiomatically calls for *with*. Thus: "Those who differ *with* you in their sentiments."—*Addison*. "Much as I may differ *with* that gentleman both as to men and measures, yet such is my opinion of his talents and his worth that I would rejoice to see him filling the highest of the executive departments of this government."—*Andrew Stuart*. "We differ entirely *with* Lord Brougham."—*N. Am. Rev.* "Judge Petigru's purity of character compelled respect even from those *with* whom he radically differed."—*N. Y. Observer*, March 26, 1863. Still, it must be confessed, that this distinction is not always observed. Even among our best writers are those who use *from* after *differ* in both these connections indiscriminately.

The verb *incorporate*, in the sense of uniting or combining with something, takes *with*; as,

"He never suffers wrong so long to grow,
And to incorporate *with* right so far
As it might come to seem the same."—*Daniel, Civil Wars*.

"Thy soul,
Imprisoned now indeed,
In real darkness of the body dwells,
Shut up from outward light
To incorporate *with* gloomy night."—*Milton*.

But in the sense of taking into the body of a thing, it is properly followed by *into*. Examples: "These knights or gentlemen were at last incorporated *into* the body of the common-weal."—*Holland, Fliny*. "The Romans did not subdue a country to put the inhabitants to fire and sword, but to incorporate them *into* their own community."—*Addison, Freeholder*. "A small settlement of these [Latinized words] had long since found their home in the bosom of the Anglo-Saxon itself, and had been entirely incorporated *into* it."—*Trench, Eng. Past and Present*. In this latter use of the word it is not uncommon to find it followed by *in* instead of *into*. Example: "These papers I have not incorporated *in* the present volume."—*Swinton, Rambles among Words*. This, however, is an error, as truly so as to say "These papers I have not brought *in*—or, *introduced in*—the present volume."

Necessity is a word which may and should be followed sometimes by *of*, and sometimes by *for*. Thus, we may say,

with equal propriety, with Junius, "They have reduced you to the necessity *of* choosing out of a variety of difficulties ;" or, with Crabb, "There would be no necessity *for* punishment, if there were no evil-doers." To lay down anything like a general rule to guide one in these cases, is more than we claim to be able to do. We note, however, that when the word is preceded by *a*, *any*, or *no*, it is usually followed by *for* ; but, when preceded by *the*, it is perhaps more commonly followed by *of*. Yet we should not hesitate to say, "The necessity *for* arguing in defense of that measure no longer exists." But to suppose that *necessity* should never be followed by *of*, is an error. Into this error Mr. Moon seems to have fallen when he takes exception (See "Bad English") to Lindley Murray's saying "This being the case, we may see the necessity *of* some attention, in order to understand their nature and use." His comment on this is simply "Say, 'the necessity *for* some attention.'" But he gives no reason for such a direction, and we see none. On the contrary, we should prefer to say with Murray here, "the necessity *of* some attention." So too, we should say, "We are frequently under the necessity *of* going without that of which we stand most in need."—*Crabb*. In conformity to this use, Macaulay says "His profession imposed on all who were not saints the necessity *of* being hypocrites."—*Miscel.* "These politicians were under the necessity *of* taking a part in theological controversies."—*Do*.

We conclude this very imperfect discussion of the misuse of prepositions by calling attention to what we regard a noteworthy misapplication of the word *between*, or *betwixt*, which should be guarded against. In the use of this preposition reference is properly had to two objects or sets of objects, and no more ; as, "The period between *Chaucer* and *Surrey* ;" "Few aged persons are conscious of any difference between the *spoken language* of their early youth and *that* of their old age."—*Trench, Eng. P. and F.* Sometimes the objects named or referred to are embraced in a single word ; as, "From betwixt two aged *oaks* ;" "The shot passed between *them*." The misuse of this word in applying it, in place of *among*, with reference to more than two objects, as in the sentence, "The Anglo-Saxons soon quarreled be-

tween themselves for precedence," is noted by grammatical writers generally. But the misapplication we refer to is the failure to supply a suitable grammatical object, denoting even two things or sets of things. One of the things or sets is named, or represented by some suitable word, while the other is not. Good writers sometimes err in this way through inadvertence. Examples: "There is a strong resemblance between the general diction of this poet and of Gower."—*G. P. Marsh, Eng. Lang.* "Between the pronunciation of the *a* in *glass* and of the *a* in *father* there is a difference in quantity."—*R. G. White, in Galaxy for Nov., 1873.* "There is a great difference between the language under Elizabeth and that under Charles I., between that under Charles I. and Charles II., between that under Charles II. and Queen Anne."—*Archdeacon Hare.* "What is the difference between the meaning of the word *boy* and *boys*?"—*Pinco, Prim. Gram.* In each of these instances the word *that* needs to be supplied to complete the true expression of the thought. Take the first of them, for example. Marsh does not mean the general diction of Chaucer and of Gower as one thing. And yet his words say this. His reference, however, is to the diction of each—to two things. Consequently, he should have said, "between the general diction of this poet and that of Gower." The next sentence has a similar blunder. If there is any meaning in words, the expression "the pronunciation of the *a* in *glass* and of the *a* in *father*" means but one pronunciation, it being implied that the sound of *a* in both cases is the same. In the next example, the words "between that under Charles I. and Charles II." really, literally mean "between *Charles II.* and the *language* under Charles I." Hence the necessity of inserting the expression *that under* before the words "Charles II." and "Queen Anne." So in the remaining sentence: "What is the difference between the meaning of the word *boy* and [that of the word] *boys*?" or, which is better, "What is the difference in meaning between the words *boy* and *boys*?" In the following sentence of Trench's the word improperly omitted is *those*: "The Saxons intruded between the Britons of Cornwall and of Wales."—*Eng. P. and P.* As this reads, the expression "the Britons of Cornwall

and of Wales" denotes but one people. But this is not Trench's meaning. He meant two peoples, and should therefore have said, "between the Britons of Cornwall and those of Wales." In the following sentence from the same author the error arises from an improper omission of the article *the*: "Thus a gulf between the written and spoken word will exist."—*Eng. P. and P.* The expression "the written and spoken word" properly means but one word. But what the writer meant was "between the written and the spoken word;" *i. e.*, two words, so called, one the spoken form and the other the written.

S. W. W.

GEOGRAPHICAL NOTES.

UNITED STATES.—Prof. Hayden has discovered that the body of water heretofore known as Madison Lake, because it was the supposed source of the Madison Fork of the Missouri, really discharges into the Pacific, and belongs to that system of drainage. He has, therefore, with questionable propriety, changed the name to Lake Shoshone, and called Lake Lewis a smaller pond into which it empties. The divide between the neighboring Yellowstone Lake and Lake Lewis was found to be about 50 feet above the former and 200 feet above the latter; and this low ridge in the Continental water-divide probably gave rise to the story of a Two-Ocean River, which appears on most of our printed maps. The question whether there can be a lake with two natural and permanent out-falls has lately been discussed in *Nature* (Aug. 14 and Sept. 11). Mr. W. Stanley Jevons, having carefully examined a reputed lake of this character, the Lesje Værks Vaud, at the summit of the Romsdal in Norway, found an actual double overflow, but the eastern one artificially regulated to furnish water-power to an old blast-furnace just below. Its channel was rectangular, paved at the bottom and sides with large boulders, and sustained by timbers. "Although these timbers are now nearly rotted

away, it is evident that the channel had at some time or other been carefully formed." Mr. Jevons continues :

"I write the above without having previously entered into the subject, and without being able to refer to any information about it. On *à priori* grounds it seems very unlikely that there should exist any lake with two distinct outflows. For in order that such a state of things should exist permanently, either there must be no erosion of the channels whatever, or the erosion must proceed with exact equality, otherwise one stream will augment at the expense of the other, and its eroding power being thus increased, it will more and more tend to sap the supplies of the other stream. The condition of things would, in fact, be that of unstable equilibrium, which could not long continue to exist."

This view, both in particular and in general, is sustained by Mr. George Greenwood, who says of the eastern exit above referred to :

"The water-parting there, between Romsdal and the Dovre Feld, is an ancient ridge of drift. A cut has been made by man through this ridge. The stream through this cut now works a saw mill, but was formerly connected with the old iron works. The one outlet from the lake enters the mill pool, from which there are two outlets, one to serve the mill the other for the waste water. All these three outlets are kept each at its required level *artificially*, that is, with piles, logs, boulders, and rubble, so that the quantity of water which is let out of the lake is regulated by 'the miller and his men.' The case is precisely equivalent to the Black Loch, in Dumfriesshire, whose *natural* (!) outlet is an iron sluice in a stone dam opening to a mill lead cut through the water-parting to Lord Bute's mill."

Mr. Robert B. Hayward, however, appears to furnish a conclusive instance in Wales :

"On the high and very broken ground between the old mountain road from Dolgelly to Towyn (which runs at the foot of Cader Idris) and the south shore of the estuary of the Mawddach is a watershed. which separates streams flowing directly into the estuary by Capel Arthog from others which, after joining the stream that descends from Llyn y Gader in the hollow immediately under the summit of Cader Idris, find their way into the estuary some three miles higher up. On this watershed lies a lake about half-a-mile long, named Llyn Creigenen, which occupies a rock basin with two lips at exactly the same level, one at its western, the other at its eastern extremity. By the western lip a small stream issues which descends rapidly and at one part of its course forms one of the branches of the Falls of Arthog, well known to visitors at Barmouth. By the eastern lip also, a

stream, diminutive, it is true (at any rate in the summer months), but still quite distinct, issues and descends into a boggy tract, along which it wanders for some two miles, until it joins the stream before mentioned from Llyn y Gader. These facts are distinctly recorded on the Ordnance map, and I have frequently verified them myself and pointed them out to others. I think there can be no doubt but that in this instance both of the outlets are *natural*, and that a stream must issue from one if a stream issues from the other, at any rate at the ordinary level of the water in the lake. It is, perhaps, impossible to say that both outlets are *permanent* in that *secular* sense which Prof. Jevons seems to attribute to the word, as circumstances are easily conceivable under which the flow through the smaller easterly outlet might cease; but at any rate for many years, supposing the average supply of water to the lake to remain the same, and no artificial barrier to be erected, the two streams will continue to issue from the lake at all seasons."

—Another change must be made in our maps. The loftiest peak in the Sierra Nevada, and, as thus far measured, in the United States, is Mt. Whitney, between Owen Lake and Tulare Lake in Southern California. The peak to which the name and the honor have heretofore been ascribed, turns out to be some six miles to the south-east of the true Mt. Whitney. How the error came about is fully described by Mr. James D. Hague in the *Overland Monthly* for November. Suffice it to say that Mr. Clarence King made an unsuccessful attempt to scale the genuine peak in 1864, from the southern side. When, in 1871, he sought to renew the ascent from the eastern side, he accepted the peak which had meantime been mistakenly located on the map of the Geological Survey. An interrupted view from the top prevented his suspecting the truth. Only last July was the error detected, and Mr. King has since made the ascent, and confirmed a previous estimate that Mt. Whitney is at least 15,000 feet high.

SOUTH AMERICA.—According to the Brazilian census of 1871, the municipality district of Rio Janeiro had 274,972 souls, 133,880 of whom were free and 92,153 enslaved. The foreign population numbered 84,283, of whom only 21,398 were females. Only 1,928 non-Catholics lived in the district. Of the 48,939 slaves only 505 were married. Of the whole population, 175,487 could neither read nor write, and of

41,514 children between 6 and 15 years of age, only 10,045 were at school. There were 200 priests, 66 of whom were foreigners, 14 Brazilian monks, and 50 foreign nuns. There were also about 30 Brazilian nuns, but these could not be brought to enumerate themselves, owing to the requirement of stating their age, which is against the rule of the Order. The Portuguese number 55,933; the French, 2,884; Italians, 1,738; Germans, 1,459; Spaniards, 1,459; English, 966; Chinese, 225; Americans, 211. The population of the city of Rio was about 240,000.

EUROPE.—The census of Rome for 1872 has, says the *Perseveranza*, very little that is comforting in its figures. Thus the births amounted only to 6,940, while the deaths reached 9,924—a tremendous difference on the wrong side. There were 919 illegitimate births, 518 foundlings exposed—a slight improvement over the preceding year. The civil marriages numbered 1,200 against 605 of the last year. The male population exceeds the female by 35,000, the cause of which is perhaps partly found in the fact that many shepherds and cultivators of the *Agro Romano* are now at work in the city, whose improvements require a large force. 417 deaths were caused by intermittent fever; 354 by typhoid; 737 by small-pox; 572 by diphtheria; 512 by apoplexy; tuberculose and like affections, 432; organic disease of the heart, 474.

AFRICA.—Lieut. Cameron's expedition to succor Livingstone reached Zanzibar Jan. 13, and five weeks later settled down to recruit at Bagamoyo, where much delay was experienced in procuring porters. The route once taken was substantially that of Stanley, but somewhat to the south. The dismal swamp which that traveler encountered was in a more favorable condition for the British party, who crossed it without difficulty. Their progress had not been unattended with collision with the natives, but the legitimate Arab traders proved "good, clever, civil, obliging and very gentlemanly." The Snider rifles with which the expedition is furnished have caused a wholesome dread among the tribes and villages through which it passes, and on more than one occasion the very sight of them has been

sufficient to prevent the down caravans from plundering the up ones under Cameron's protection. This leader "gives almost Utopian accounts of the bucolic and village life of the negroes in this quarter of Africa, and asserts distinctly that their condition is superior to that of the ordinary agricultural laborer in England"—which is quite credible. The Queen has granted Dr. Livingstone a pension of £300 a year.

—Dr. Schweinfurth visited the Monbuttu country in 1868, and remained there five weeks under the special protection of the king, Munsa. So far as the country itself was concerned, a longer stay would have been delightful; but a peculiar habit of the people somewhat detracts from the traveler's enjoyment. We append (from *Nature*) an abstract of a recent paper on this subject by Dr. Schweinfurth:

"It is a densely populated district lying between 3 and 4 N. lat., and 28 and 29 E. long., and bounded on the north by the Kibali, a copious stream which unites with the Gadda, and under the name of Uelle receives in its passage through the Miam-Miam country a number of other streams, that serve as feeders to Lake Tsad. The country of the Monbuttus, lying at an elevation of from 2,500 to 3,000 feet above the level of the sea, consists of an ever-varying alternation of gently swelling hills and well-watered valleys, alike rich in palms and bananas, and every other form of luxuriant tropical vegetation. In this earthly paradise where Nature spares man the burden of labor, the people, although living under an organized system of government, and showing extraordinary skill in working metals and in other arts, are habitual cannibals. This is not from want of animal food, as elephants, buffaloes, antelopes and wild swine abound, but whatever the cause may be, the fact is undisputed that the cannibalism of the otherwise gentle Monbuttus exceeds that of any other known African nation, and is systematically gratified at the expense of the more degraded blacks living beyond their frontiers, whom they seize and carry away, driving their captives before them like a herd of sheep, and slaughtering them as they need them. The young children and the fattest individuals are kept for the royal kitchen, where the flesh is dried and prepared with capsicums and many savory fruits for the king, Munsa, whose numerous wives have to take it in turn to cook for him. The power of the king is supreme, and it would appear that the land of the Monbuttus may rank as one of the most important monarchical states of Central Africa. In race the people seem to approximate to the Fulbe, and in language to the north equatorial African group. They recognize one supreme being,

appear to have no outward symbols of worship, and practise circumcision."

ASIA.—Baron von Maltzan states that in spite of amalgamation with central Arabian elements, the population of South Arabia still admits of division into two distinct peoples, the Sabäer and the Himyarites, the former of whom have light yellow skins, while the latter, whose name he derives from *Hamr*, red, are so dark-skinned as to be generally classed amongst the black races. He observed a curious physical character in the family of the Himyarite rulers of the Fodli, or Ozmani-State, many of whom, both males and females, had six fingers and six toes on both hands and feet. This peculiarity is looked upon by the people at large as a special mark of blue blood, and prized accordingly by the possessors. It would seem that the practice of forming consanguineous marriages, which prevails in the Fodli, as in other ruling houses, may of itself explain, as a mere case of hereditary recurrence, the appearance of this physiological character in numerous and remote members of the family. The portion of Arabia selected by Von Maltzan for his explorations was the extreme southern end of the peninsula, almost a *tabula rasa* on our maps.

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—It is announced that Mr. James Gordon Bennett proposes fitting out an Arctic expedition for the discovery of the North Pole.—*Tribune*, Oct. 24.

—According to the *Melbourne Argus*, H. M. S. *Basilisk*, Captain Moresby, while cruising in Torres Straits and neighborhood for the suppression of the Polynesian labor traffic, has added a valuable fact to the knowledge we possessed of the geography of New Guinea by the discovery of a new port and harbor in lat. 9° 30' S., lon. 147° 10' E., about 38 miles east of Redscar Bay, on the south-eastern coast. The

discovery was made in February, when Capt. Moresby, while searching for a river supposed to flow into the sea east of Redscar Bay, entered an inlet which proved to be the entrance to a magnificent harbor, with an outer and inner anchorage, to which the names of Port Moresby and Fairfax Harbor have been given. The natives are much lighter complexioned than those of the opposite coast, and are evidently of a much more friendly disposition.—*Nature*, Aug. 14.

Cartography.—Petermann's *Mittheilungen* for Aug. 21 gives a map of Khiva from Russian sources. High schools and academies will be interested in knowing that the following maps may be procured of the Librairie Militaire de Dumaine, Paris. They are part of the publications of the Commission for the Topography of Gaul established by the late Emperor Napoleon in 1858: (1) An orohydrographical map of Gaul, in four sheets; (2) the same, with the addition of names and boundaries, to represent Gaul under the pro-consulate of Julius Cæsar. The Commission are preparing a map of Gaul showing the geographical distribution of the Gaulish tribes.

Photography.—Invasion, insurrection, mutiny, anarchy, shall not deter us from entering Spain, with the camera; shall rather whet our appetite to see something of this unstable and yet old and conservative land. No better views could we desire than those of Mr. Frank M. Good.* On'y a few can here be passed under review; what remains is of equal quality. As a guide in our Spanish tour we may as well employ a fellow-countryman, the Hon. S. S. Cox, whose "Search for Winter Sunbeams in the Riviera, Corsica, Algiers, and Spain" (New York: Appletons, 1870) is agreeable reading, and will be freely used in our descriptions.

If we enter Spain with the Atlantic breezes we shall naturally first visit Seville, perhaps crossing the substantial iron bridge shown in No. 318, the *Guadalquivir* flowing beneath—"not a poetical river to look at," says Mr. Cox, and "not only turbid but dull in its flow." Once in the city, we pause before the *Entrance to the Alcazár* (No. 320), the Moorish palace whose architecture, in its ornamental chisellings, so forcibly recalls the architecture of India. Of the interior details we select the lovely *Moorish Arches* in No. 334, beside which Gothic and Grecian stone-work appears bald and timid—though far be it from us to defend this comparison! What is the nature of the *Panorama from the Alcazár*? Within the walls it "is that of an Oriental city. The house-roofs are tiled with the grey tile, a little mossed, while the roofs and domes of the churches are, some of them, blue-tiled. The city is compact and interspersed with greenery." This is a quite exact description of No. 314. The *Bull-ring* we shall see only as we stand in it to get a view of the Cathedral (No. 317), and let our eyes linger a moment on the segment of the amphitheatre

* In the stock of Messrs. E. & H. T. Anthony, 591 Broadway.

(true barbarous Roman inheritance) before rising to the surprising edifice in the distance. Here the mass of the Cathedral with its tower (Giralda) recalls the form of the camel. A near view of it, exactly at right angles to the former, is given in No. 315, with the effect of huddling together the domes and turrets and flying buttresses, but affording a good study of the tower, "rising, compartment up and out of compartment, like a telescope drawn out," and crowned with the usual dome, as well as with the extraordinary dame-weathercock whose name the tower bears. One readily believes, from what can here be seen of the exterior, in the Cathedral's "seventeen splendid entrances," "twenty-three chapels," and "ninety-three painted windows." The House of Pilate (*Casa de Pilatos*) is pictured in No. 337 from the inner court, so characteristic of Moorish architecture. An arched colonnade in two stories surrounds the marble area, in the midst of which is a fountain capped with a classic bust. In one corner is a statue of Minerva; in the opposite a figure grasping a globe; and over all rises a grand octagonal tower. A fine crypt, the *Sultana's Bathing-place*, is the subject of No. 335, which only conjecturally we assign to Seville. Passing up the Guadalquivir to Cordoba, we pause on the banks of the stream to view the *Cathedral* (No. 285), a less grand, but seemingly a more consistent design than that of Seville. As before, we are looking at a city set in a plain; but here we catch a glimpse of the sierra in the distance. A *Bridge* with one Roman and two Moorish arches; a *Gateway* that recalls one we have seen at Cartagena in New Grenada—these and the river make a fine and almost tender composition (No. 286). Part of the wall and the *Caliph's Tower* are seen from the road in No. 307; a tree, decaying like the tower, seems to compete with it in endurance. A *Street View*, No. 303, has much in common with one that we might name in Matanzas. The vista leads up to a palm-tree in some far-off garden. In the side view of the *Market Place*, No. 300, coarse earthen-ware, rope, and rope baskets seem the only commodities, but the market-women are a pleasant study. We must go N. E. to strike the coast at Valencia, where we stop only to make the acquaintance of the *Porta del Palau*, the doorway of the Cathedral, a curious piece of fourteenth century work, consisting of six concentric arches resting on columns (No. 268); and of the *Tower of Santa Catalina* (No. 269 A), seen between rows of balconied houses, "whose windows are shaded with the matting curtains so peculiar to this part of Spain." Still further north we come to the port of Tarragona, the *Tarraco* of the Romans, the *Tarchon* of the Phœnicians, whose lofty site is well depicted in the *General View*, No. 271, in which the surf breaks upon huge masses of rock at our feet. On the shore was built the old Roman amphitheatre, which has been used as a quarry, now to make a mole for the harbor, now for various purposes of building, and the seats of which, so far as it is preserved, are seen in the *View from the Ramparts*, No. 272, looking out upon the Mediterranean. Outside the walls we meet

with another antiquity, the so-called *Tomb of the Scipios*, No. 282, though there is no foundation for the name. It is a striking massive square tower, perhaps thirty feet high, the top wanting, and the sculptured figures on the side almost destroyed. Once more northward bound, we arrive at *Barcelona*, and look down upon it from Monjuich, a height of nearly six hundred feet (No. 254). It is a city of noble extent and appearance, with many commanding towers, and with a charming background of sierras. The *Ancient Gate* of the city, No. 256, two round towers of stone and brick, lets us into a curious narrow street, whose pavements still glisten from the late rain. Turning now to ascend the Ebro, we reach Saragossa, whose *Market-Place* (No. 251) exhibits a motley extent of separate stalls on the sidewalk and in the street, overlooked by tall balconied dwelling-houses interesting to behold. The patient donkey of the *Water-carrier* (No. 253), laden with four jars, the water-carrier himself sitting beside the spouting fountain, his little girl, the rough pavement, the great doorway—it is a character-picture worth owning.

We have already quit Spain when we find ourselves at *Biarritz*, and take our first view of it from the Lighthouse (No. 241), stared at by horned cattle perilously near the edge of cliffs which rise sheer from the waters of the Bay of Biscay. The town looks more solid than we commonly imagine a watering-place to be; and solid work was done there, we fancy, when Bismarck took the measure of Napoleon III. in personal interviews, and felt that he had in him an adversary not to be feared. The *Virgin Rock* at Biarritz (No. 244) is a short tunnel utilized by a railroad below and by piety above, being surmounted by a colossal statue of the Virgin. At *Bayonne*, as seen from the Citadel, we find hôtels and bridges reminding us of Paris; a gate in Spanish fashion; a battery and esplanade; warehouses, shipping—an interesting port altogether (No. 240).

Obituary.—Vice-Admiral Sir Robert McClure, who died in London in October, was born in Wexford, Ireland, Jan. 28, 1807. He had already made two Arctic voyages when, in 1850, he left Plymouth in command of the *Investigator*, under orders to pass through Behring's Straits, and thence, if practicable, proceed to Melville Island—which had not then been accomplished by any vessel. Capt. McClure spent nearly four years this time in the Arctic regions, during which he made search for traces of Sir John Franklin, still keeping in view his purpose of reaching the Atlantic from the Pacific Ocean, by sailing around the seas which form the northern boundary of this continent. After meeting with great perils, and displaying remarkable fortitude, he succeeded in accomplishing his purpose, and arrived in England in September, 1854. He was treated with marked distinction on his return, received the reward of \$25,000 offered for his discovery, and subsequently was knighted and made Vice-Admiral.

MINERAL SUBSTANCES AS AIDS TO EDUCATION.

I.

WHY A SELECTED SERIES OF MINERAL SUBSTANCES SHOULD BE USED
FOR INSTRUCTION IN OUR COMMON SCHOOLS.

IT is a very prevalent mistake to suppose that the introduction into our common schools of instruction upon natural objects implies the teaching of the naturalologies. Educators, qualified to form an opinion, know however that, so far from its being a possibility to teach Botany and Zoology, Mineralogy and Geology in any other than a strictly scientific institution, it is next to impossible to even make a pretence of teaching any one of them in an effective manner, in an ordinary school. To educate mineralogists or botanists requires an out of door and out of school training and an expenditure of time, that is utterly incompatible with elementary school work. A taste for science however may be inspired, and the path may be indicated to the pupil by following which he may in his leisure hours, or later in life, become proficient in one or more of these sciences. Not that it is our hope nor our intention, in all nor even in many cases, to produce such a result; we may not wish our children to become botanists or entomologists, and we most assuredly do not desire that they should have imparted to them a superficial smattering of such sciences; but we do think, that it is time that our children should be allowed some insight into the nature and scope of the natural sciences; that they should have opportunity afforded them of learning, by their own experience, how a science is pursued; of realizing upon what sure bases scientific knowledge rests, and of recognizing by experiment the exactitude and practical value of scientific method. In other words, we ask that they may have the advantage of some scientific training. The practical value of such training is unlimited; in inuring to greater, it subserves lesser ends; the same experience in methodical manipulation that is essential to the great chemist will certainly tend to make a reliable cook, and the same kind of experience in experiment, that carried farther would make a skillful mineralogist, will be of the greatest

value to the mechanic or the farmer ; whilst the habit of careful inductive reasoning that marks the philosophic geologist, will ensure sound judgments upon every day contingencies. Scientific training in fact is the best assurance against habits of careless observation and against the practice of drawing hasty and hap-hazard conclusions.

If it be desirable to give this training at all, the earlier it is commenced the better, and it can be carried out only by the use of natural objects. *Objects*, because it cannot be imparted by words alone ; its very spirit requires that the term shall follow the perception of an idea and not that the latter shall be given as an explanation of a term. Let the child ask, "What do you call this that I see or feel?" not "What is the meaning of this word that you use?" The scientific discoverer makes and examines his discovery before he names it ; he does not invent a word and then seek for the object that it shall represent. *Natural* objects, in preference to artificial ones, should be chosen for a reason to be given presently. Of natural objects mineral substances stand lowest both in the simplicity of their composition and in their want of vitality ; and the ideas to be evolved from them are consequently less complex than those derivable from an examination of plants and animals. They are also admirably adapted to convey to the minds of children vivid conceptions of the physical, and even of some of the simpler chemical, properties of matter ;—thus hardness, color, lustre, diaphaneity and the rest, with the effects produced by heat and acids, may be easily and deeply impressed on the mind by these substances used as objects in object lessons. It may be said that minerals will not prove as interesting subjects as plants and animals ; this depends on the teacher alone. Children, finding that, instead of having to pore over dull text-books at home, they have to bring to school, as part of their lesson, specimens from the road-side or from the parlor mantel-shelf, will soon remind the teacher, if bright and qualified, of the boy who, having to clear the field of stones, accomplished the task by converting it into a pastime for both himself and others.

But why select stones and rocks, as objects to illustrate the physical properties of matter, in preference to chairs

and tables, blackboards and blackboard brushes, and other such favorite subjects for object teaching? Because whereas a chair is an isolated subject, the instruction upon it beginning and ending in itself, such is not the case with a mineral, which is but one of a natural series, and, as your pupils will soon realize, a stepping-stone to more and more of those novel ideas that their young minds are ever eager to grasp. Add a second mineral to the first, let the pupils compare the two, noting their resemblances and their differences,—it is a first step in Mineralogy; make them discern these two minerals associated together in a rock,—it is a first lesson in Geology. Your pupils will not recognize, perhaps for some time to come, the fact that they are entering upon these “sciences;” but they will realize that they are turning into a new path leading them into an undreamt of land. You may thus perceive that a *selected* series of mineral substances, besides supplying subjects for object-lessons, subserves naturally other and higher ends; and it is this consideration that will induce you to prefer such natural substances rather than artificial ones for the purpose of object instruction. To obtain this ulterior advantage, however, you must select your subjects with judgment and not take them hap-hazard.

The teacher will not intend to teach the science of mineralogy, and yet as you may see above, if he use his advantages, he cannot help putting his pupils in a fair way to learn it by setting before them how it is to be studied; nay, he will absolutely teach them something of it, for he will show them how to recognize and distinguish from each other the few minerals that he has time to exhibit to them. The characters of hardness, cleavage, color, lustre, specific gravity, solubility and fusibility which he draws out from his pupils are the very ones from which the mineralogist infers the nature, the chemical composition and the history, of the mineral before him. It is true that he applies crystallographic knowledge, where possible, as a crucial test, which we cannot attempt to use in our most elementary work; but we may console ourselves that it is comparatively seldom that this test is applicable, as in ninety-nine specimens out of a hundred that will occur to our pupils, the

crystalline form will not be shown and we shall consequently have to rely upon other characters for the required determination.

But is it desirable that our pupils should have any knowledge at all of minerals? Is there any value practical or educational attaching to the science of mineralogy? or at any rate is the knowledge to be thus gained equivalent in value to other information that might be obtained in the same time? In the first place, what is the practical value of this information? I answer at once that we, as educators, have nothing whatever to do with this question. I might suggest to you and you will, if you teach rightly, suggest to your pupils a large amount of practical information regarding mineral substances. It will undoubtedly add to the interest of your instruction to explain to your classes that quartz is the material of the sand used in glass-making; that feldspar is the source of the clay used in pottery; to impress upon them the importance, the geographical distribution and the relative value of the ores of iron, or of the varieties of coal, and so forth. But all this will be purely incidental; the chief end that we have in view is the educational value of our teaching; our object is to develop the intellectual faculties of our pupils. It is not in our sphere to give technical instruction; if we were required to teach the practical applications of Geology, we should demand that first we must be allowed time to teach the pure science itself; or, if requested to give instruction in Hygiene, we should properly suggest that it must be preceded by a full course on Physiology. I draw attention to this, because of all the fallacies that impede the introduction of really scientific instruction into schools, this "practical value" question is perhaps the worst. The sooner the public appreciates that the practical man is the puppet that appears before it, draws the audience and receives the laughter and applause (and, what a puppet however does not, the profits), but that it is the scientific man in his unrecognized laboratory that pulls the strings that work this puppet; and the sooner people reflect upon the palpable truism, that a knowledge of the pure science must necessarily precede its intelligent application, the better will it be for the cause of education. We

then in our sphere, as we cannot even venture upon teaching more than the elements of the pure sciences, are altogether out of the field of their practical application. We can, however, lay the foundation upon which sound scientific knowledge may hereafter be built up, if needed, in the scientific and technological institute; and the more soundly we thus prepare our pupils, the more valuable our services to the community. It may be said that not one child in a thousand is destined to enter a scientific school or to follow strictly scientific pursuits. Strictly speaking this is so, but so intimately is science intermingled with our every day life, that every young person who wishes to succeed should devote some of his leisure time to the acquirement of scientific knowledge, and to the cultivation of habits of scientific reading and thought. The agriculturist, the gardener, the mechanic or the lawyer who has such knowledge has an intellectual implement which will give him a thousand and one extra chances in the social struggle for existence, and which will entitle him to the social status that is the right of the better educated. The more extensive his knowledge, if bridled by a habit of experiment and reasoning, careful experiment to curb, and cautious reasoning to guide, the more certain his success, and the greater his influence over his less trained and less accomplished fellows.

But what has this to do with the educational value of minerals and of mineralogy? Any insight into mineralogy inevitably leads us into the domain of Geology; and I do not hesitate to say, that of all the natural sciences, Geology gives the deepest intellectual training, broadens the mind and elevates its conceptions to the greatest degree, and tends more than any other to make man realize the vastness of Creation and his own glorious place in the grand scheme. There is not a science that it does not call to its aid, and every field of material enquiry is taxed for its elaboration. Thought trained by the strictest mathematical habit is in it applied to carefully sifted observations made in every department of Nature. Physics and chemistry, astronomy and meteorology, botany and zoology and their subordinate sciences, have to be drawn upon if we would understand the history of our earth, a history which alone is the key to

physical geography, as that in turn reveals to us the deepest secrets of ethnology and political geography. It may be thought that I make an exaggerated claim for geology, and yet a moment's reflection will satisfy you that the history of this earth is the history not merely of a dull clod of inert matter, but that it is the history of all that peoples, or ever has peopled this orb. A knowledge of every law of Nature would alone allow us to read this wonderful story in its fullness, and we can only read it imperfectly as far as we know those laws; and yet what a vast record is revealed to us, a record that expands our ideas of time as astronomy does of space, a record that, revealing the magnitude of Creation, inevitably overwhelms us with thoughts of the Creator. Can we say that any education deserves the name which ignores the existence of such an ennobling and comprehensive science as this? And yet throughout this country there are thousands of schools in which it is scarcely called by its name, and in which its truths and its teachings are utterly untaught, because to the very teachers unknown. But how impossible to teach such a science as this, a pyramid as it were of all the other sciences! Granted at once! it is out of the question to give in our schools a detailed insight into geology, but it happily is a science, of which if certain simple elements are taught, the after pursuit may be made to a considerable extent by means of books and collections in museums. It is, therefore, a science towards which it is desirable to attract the young, because it is one which they can easily pursue even in cities, which is inexhaustible in its interest, which possesses an extensive and, to the initiated, an entertaining literature, and which is, therefore, peculiarly adapted to encourage desirable habits of reading and reflection, an end which should be a prominent one in all school education.

It is then that our children may be taught that the earth and all that is on it has a great and eventful history, that they may be given the opportunity of understanding this history and of profiting their minds by a study of it, that I urge that instruction on the subject of minerals be introduced into every school throughout the land. Fossils have been aptly termed the "medals of Creation;" minerals

are the alphabet of the language, in which the history of this earth is recorded. In attempting to understand this history, you come, we will suppose, to the term "granitic rocks"—will not this be an empty sound to you, unless you know by sight and touch quartz, feldspar, mica and hornblende? or are not the "sedimentary rocks" indefinite somethings, unless you know the history of sand and clay?

I trust that I have given a satisfactory answer to the question, "Why Minerals should be used as Aids to Education." In my next I will try to show "How they may be used for that purpose."

THE NEW NORMAL COLLEGE.

THE new Normal College, situated at sixty-ninth street and Lexington Avenue, in this city, was formally dedicated on Wednesday morning, Oct. 29th. The building, which is of brick, is 200 by 400 feet in size, and is capable of accomodating from 1,500 to 1,600 pupils. Including the ground upon which it stands, and the furniture, apparatus, etc., it has cost fully \$1,000,000. The long-felt need for such a college led to its establishment in temporary quarters a few years ago, where its success was so great that the Board of Education resolved to give it a "local habitation," inasmuch as it had already gained a "name." Work was accordingly commenced some three years ago, and the building was sufficiently forward to be occupied in September. At the dedication the gallery of the chapel was filled with friends of the institution, and, with the first notes of a stirring march, the pupils began to file in and take their places in the body of the room.

The Rev. Dr. Burchard opened the exercises by reading selections from the Scriptures, after which there was music by the students. Mr. Neilson, President of the Board of Education, made the opening address. He spoke of woman's influence in the school and at home, and urged the importance of a proper education for her. A proper

education does not consist in cramming her with a variety of studies, or giving her a smattering of many sciences and languages. All these may be thoroughly taught, and she may still be of little benefit to society. The great necessity is the inculcation of the highest tone of moral sentiment. In addition to this the judgment should be carefully cultivated, and the pupils taught to reason, so that when they become teachers, they can give the grounds for the views they entertain. Pursuing such a course of instruction, the college will be the heart of our school system, from which shall flow a purer and healthier current, elevating and strengthening the whole body. In closing, President Neilson spoke of the relation of the public to the private schools, and of the duty of the latter to strive to conciliate the prejudices of all reasonable persons. We must not, however, go so far as to make our schools godless. Our children must be instructed in morality that they may be kept from crime.

After the rendering of Mendelssohn's "Autumn Song" by the students, Mr. James W. Farr, Chairman of the Committee on Normal Schools, gave a short sketch of the college, and spoke of the necessity for its establishment. Of the 2,300 teachers employed in the city, over 2,100 are females. About 180 of these annually abandon their profession, and it is to supply this constant loss that the college was founded. It now has a noble building, and an efficient president and corps of instructors, and all that is needed to make it a complete success, is the hearty support of the Board of Education. A pleasant feature of the exercises was a series of recitations by the pupils, some of whom evinced unusual cultivation of voice and training in delivery. A scene from the "Merchant of Venice" was very well rendered by Miss Minnie Ferrero. Mayor Havemeyer followed with a brief address, saying that he had been present as Mayor at the dedication of the Free Academy nearly twenty-five years ago. The advantages which were then offered to boys were now extended to girls. This is as it should be. A republican government must depend for its stability upon the intelligence of its citizens. Education must fit them to perform their duties, and it alone can keep

down the dangerous classes. In speaking to the pupils, soon to become teachers, the Mayor counselled patience to discover and develop the good qualities of their scholars. It is not always the brightest child that makes the most successful man. How responsible, then, is the teacher's position, and how great the reward if its duties are properly understood, and faithfully performed. Miss E. Ida Conant, President of the Alumnae of the Normal College, followed Mayor Havemeyer, noting the progress made in female education, and thanking the Board of Education for providing a place where girls can be suitably prepared for the profession of teaching.

After singing by the pupils, Mr. Henry Kiddle, Superintendent of Schools, spoke of the development of the public school system, from the two schools opened in 1842, to the present time. The growth has been gradual, and the present college is the natural sequence of the first two schools. Since then there has been a large expenditure of money, but it has been a good investment, and the taxpayers have not objected. Some have, indeed, questioned the propriety of educating teachers for their profession, and have argued that we might as well open public law or medical institutions. It is, however, a simple matter of necessity; if we do not educate teachers we cannot get good ones. After a short address by the Hon. W. E. Curtis, a former President of the Board, Mr. Thomas Hunter, President of the College, delivered the closing address. He traced the relation of Normal Schools to general education, and spoke of the characteristics of the school over which he presides. Unlike some others, it has a training school connected with it, so that graduates are not wholly inexperienced in teaching.

At the close of Mr. Hunter's remarks Mr. Neilson formally dedicated the building, saying: "I now, in behalf of the Board of Education, declare this building to be dedicated, and set apart forever, for the purpose of a Normal College, and may God prosper it always." The exercises were then closed by singing the Doxology.

GREAT PRETENTIONS IN HIGH PLACES.

THERE are many, uninitiated perhaps, who hold that the main object of a Convention is rhetorical display. With such, the "reports" tend only to confirm the theory that, in purpose and origin, Conventions are largely the offspring of personal ambitions. The conviction naturally follows that in the matter of organization, they are manipulated, almost without exception, in the interests of parties, who are both zealous as theorists, and imperious in prosecuting their designs of self-promotion. Hence the impression is becoming general that the modern Convention, whether political or otherwise, is not largely illustrative, as it should be, of a beneficent energy wisely directed to the accomplishment of great and useful objects. Not only does personal pretension with its nauseous vauntings usurp the place of fair and logical discussion, but even the more sober and dignified proceedings, considered apart from the personal railery and subterfuge which always blend with them, lack sadly in character. They are too often dull, lifeless, comparatively purposeless. Destitute of definite aim, they drift on without inspiration, and consequently are but rarely instrumental of good.

The late convention, over which the Rev. Birdsey Grant Northrop presided, while excellent in some of its features, cannot in many respects command words of praise in its behalf. It is true, a modicum of good may accrue from the free comparison of views on important subjects, which occupied so many of its hours. Above all and over all, however, like an unpleasant cloud which would not rift, were the deportment of the Chairman, and the persistent hobby-riding of a few favored chieftains. The recent "proceedings" re-affirm with more than necessary emphasis that the Hon. Birdsey Grant Northrop is ambitious both of fame and place. He is always admirable in leadership. As presiding genius, he took his department in hand and did for it after his most approved methods. What the ancient Turveydrop was as a model of deportment, so was the Honorable gentleman as a model of dignity in his capacity of presiding chief. Like a true model, too, he knows how to

honor name when place gives it character. But, then, as a palliation, it must be remembered that reputation, like poetry, has its special licenses, and Mr. Northrop recognizes those by instinct. So both as patron and model, Mr. Northrop gave intensest satisfaction to himself—"one of the soundest educators of America," and no little pleasure to his friends, the hobbyists.

As a historian, too, the chairman was delightfully pleasant. His opportunities certainly have been great. He has "done" the field educational in Massachusetts; he has "presided" in Connecticut; has dwelt in spirit among the orientals in Japan, and "modeled" for them; and, not to be outdone, he has mastered the system of New Jersey in all its details! The assurance with which he announced that "whatever is excellent in the school system of New Jersey is due to Dr. McCosh," was most admirable. As a specimen of historical fiction, nothing could have been more charming. The fact that the establishment of a State Board of Education in New Jersey in 1863 was the initial measure of reform, and that "whatever is excellent" in her system is due to the activity and influence of that Board, does not militate against the gentleman's position. He knows. When he comes to write the "History of Education in America" what startling revelations shall be made! "Honor to whom honor is due," as a maxim, must then go to the wall forever.

The Convention, as a whole, cannot be condemned. The many able young Professors who participated in the discussions, won honors by the genuine, sound sense of their remarks, as well as by the clear and well-sustained views contained in the papers which they presented. That these will prove a stimulus to investigation cannot be doubted. What is needed to the progress of our schools, is close and careful observation upon the part of educators. The ways and means of liberal culture are yet in process of discovery, and it is the province of instructors to add yearly to the general knowledge respecting this important subject. This great work must go forward despite "manipulators;" for it is not to them that we look for aid in the effort to occupy advanced ground.

JERSEYMAN.

CREAM OF THE EDUCATIONAL MONTHLIES.

THERE is some force in the arguments of a writer in the *Massachusetts Teacher* against studying Natural History from pictures. It is true that it introduces an element of faith, which scientific investigation should exclude, but children must take some things on faith, even in science, until their minds are sufficiently matured to carefully observe. The question is not if pictures are better than the objects they represent, but if they are better than nothing, for teachers, especially in cities, are unable to obtain living specimens. The Natural History Museums, which we hope some day to have, will result from the interest awakened in the subject by such pictures as Prang's. Some of the objections to cards might hold with living specimens, as, for example, that "the flight" of falcons "is not shown in the pictures, nor the living in pairs." The former would hardly be demonstrated unless the stock of falcons was unusually large, and as to living in pairs they would probably live in pairs or singly as they happened to be caged. In "Reminiscences of Boston Schools forty-five years ago" we are taken with the Medal Scholars to a corporation dinner, a "gander party," but are with them marshalled out after the first toast. It is better so, perhaps, for rumor says that the stories and songs of the City Fathers were not the most select, after the first few toasts had been drunk. "Object Teaching," "Two Latin Lessons," from a familiar pen, and a paper on "William Russell" are the other principal articles in the *Teacher*.

The first article in the *National Teacher* deprecates a strict adherence to system in teaching young children, arguing that the child prefers unsystematized facts. The facts of nature, and the laws of mind, indicate, the writer says, that system is unnatural and undesirable. It is true that there is a spontaneous activity in children which naturally leaps from one thing to another, but we cannot but think that this activity can be wisely directed and thus made to produce better results than if left to itself. The writer appears to have fallen into the error of thinking that systematic teaching is necessarily formal. The *Teacher* seems to be all at sea

concerning the discussion between Dr. McCosh and Prof. Atherton. Dr. McCosh said that Agricultural Colleges were a failure, and instanced Cornell University as giving a dividend of two farmers upon its endowment. Prof. Atherton pointed out that the colleges commonly called agricultural, were, by the terms of the law, to provide a liberal and practical education for the industrial classes in their several pursuits and professions in life, and that Cornell University was educating 207 students upon the Congressional endowment. The other articles in this journal discuss, "Preparation for Teaching," and "Natural Science in Common Schools."

A writer in the *Pennsylvania School Journal* discourses upon the importance of punctuation to a clear expression of ideas, and notices the proper marks to precede, and follow, quotations. The rule laid down is, that a long quotation should invariably be introduced by a colon; a single short sentence by a comma, if introduced informally; by a colon, if formally introduced. By a formal introduction is meant one consisting of, "these words," "as follows," "the following words." The proper quotation marks to be employed is a more complicated matter, and an extreme case is given, which we cite as a curiosity. "It is written in the gospel, 'Jesus answered the Jews, "Is it not written in your law, 'I said, "ye are gods"'"?''" So far as we can see this is in accordance with the laws of quotation, however much it may offend against the canons of common sense. Strictly speaking, it would be incorrect to omit any of these marks, and yet we think it may be done in actual practice. So good an authority as the *Atlantic Monthly*, however, closes a book-notice with six quotation marks and an exclamation point. "A Necrology," "Mysteries of the Circle," "The City Superintendency," and a good "Editorial Department" complete this number of the *Journal*.

MILTON was asked by a friend whether he would instruct his daughters in the different languages: to which he replied, "No, sir; one tongue is sufficient for a woman."

THE CHOICE OF STUDIES IN SCHOOLS.

THE Illinois newspapers report an interesting case involving the authority of School-Boards over the studies of pupils, which was decided at Rockford, Ill., a few days ago. The plaintiff was Miss Post, and the defendant Mr. Rulinson, teacher in Durand township high-school, in Winnebago county. The plaintiff was in the junior class of the high-school, and among the prescribed studies for the class was book-keeping. The plaintiff's mother did not want her to study book-keeping, because she had already as many lessons as the state of her health would permit her to master. She therefore refused to pursue that study and to obtain the necessary books. The directors ordered her expulsion, and the teacher, Rulinson, put her out of the building, using some force in the proceeding. Subsequently her step-father applied for her readmission, but the School-Board would not consent to it except on condition that she agree to study book-keeping. The plaintiff appealed to the Circuit Court. The case was tried twice without a decision, but on the third trial the jury, under the instructions of the court, found for the plaintiff, and awarded her \$130 damages for trespass on the part of the defendant.

The judge, in his instructions to the jury, held that school directors may adopt reasonable regulations for the conduct of public schools and prescribe a course of study; but parents and guardians have the right, honestly and in good faith, to select from the prescribed studies the practical ones they desire their children or wards to pursue; that the refusal of a pupil, under instructions from his or her parents or guardian, to pursue the entire list of prescribed studies does not warrant an expulsion. It was intimated that a pupil had no right to reject a study from mere caprice or perversity. Under these instructions, the jury found for the plaintiff as above stated.

The case is interesting, because it defines the authority of the State (in the form of a school board) and the rights of parents, over the recipients of public education. The tendency of things is toward an exaggeration of the School-

Board authorities to make it supreme in the matter of the child's instruction, and independent of the parent. But this decision, while admitting the Board's authority over the pupil, asserts the parental rights over the child, and declares that the parents may have a voice, subject to reasonable rules, in the selection of their children's studies; in other words, that the prior relation of parent and child is not entirely subjected to that of State and citizen.

EDUCATIONAL INTELLIGENCE.

CONNECTICUT.—The State Medical Society, recognizing the importance of a good education as the foundation of a successful study of medicine, has taken measures to raise the requirements for candidates for the degree of M.D. A Board of Censors has been appointed, whose business it will be to examine candidates for admission to the Medical School, and it is probable that by another year something more than a mere common school education and a certificate of "good moral character" will be required. This step is being taken by all the chief medical colleges in the country.

NEW HAVEN.—The total number of students in the Sheffield Scientific School is 243, of whom 38 are graduate students. This is an increase of 42 for the present year. It is the design of the Governing Board to make the time of study for the degree of Bachelor of Philosophy extend over a period of four years, instead of giving the degree as at present to undergraduate students after three years' study. During the year past the degree of Dynamical Engineering has been instituted, and the requirements for the degree of Civil Engineer have been enlarged so as to demand two years of post-graduate study.

DISTRICT OF COLUMBIA.—There is a disgraceful state of affairs among the public schools; they are without fuel, and the teachers without pay. At a late meeting of the Board of Trustees of Public Schools, Mr. Stuart called

attention to the necessity of making some arrangements by which the teachers and other employees could be paid their salaries ; for, as matters now stood, he knew of cases where employees had been driven from their homes and were suffering for the necessities of life in consequence of this great neglect in not paying them, if not all, at least a part of their salaries. He considered it a great outrage—and he was right.

MICHIGAN.—The additional 50,000 acres of school lands to which it has been discovered that Michigan is entitled are now being selected, and will add \$200,000 to the primary school fund of the State, the lands being held for sale at \$4 per acre.

TENNESSEE.—NASHVILLE.—The corner-stone of Jubilee Hall of the Fisk University has just been laid. The colored singers of the University made enough money with their concerts to buy 25 acres of land, eight acres of which are in the square forming the site of the hall ; 3,000 Congregational churches are also contributing to the building.

UTAH TERRITORY.—Number of schools 268, number of teachers 358. The school population reported is 28,737, of which 59.1 per cent. are enrolled, with an actual attendance of 44.6 per cent. Schools generally are sustained by tuition fees, which range from \$2.50 to \$8 per quarter. Taking advantage of the seventh section in the school code, which authorizes the assessment and collection of one per cent. to pay teachers, several school districts have essayed to establish free schools. The Territorial Superintendent visited one of these and thus relates his experience. " On entering the primary department, in the basement of the building, it was immediately apparent that ventilation was not neglected, for the school teacher complained that about one-third of the panes of glass were broken ; and seeing many pupils without text books, on inquiry, the fact was elicited that fifty per cent. of those in attendance were destitute of books, nor were charts or other aids brought into requisition to supply this deficiency." This tax of one per cent. is not sufficient to erect buildings and support teachers, and the Superintendent recommends a tax of one and one-half per

cent. The establishment of a State Normal School is also strongly urged.

THE following are the conditions upon which aid is given from the Peabody fund to the Southern schools :

First : The school for which the aid is asked must be a public free school, under the control of the lawfully constituted local school authorities.

Second : It must have a bona fide enrollment of not less than 100 pupils, averaging 85 per day.

Third : It must have an assured fund for current expenses, amounting to at least twice as much as the aid received from the fund.

Fourth : It must be a graded school.

Fifth : A teacher must be furnished for every fifty pupils at most.

Sixth : Two copies of the blanks must be filled up and subscribed by the proper parties, and returned to the State Superintendent of Public Instruction at Nashville.

ENGLAND.—The College for Women at Cambridge, England, is now established, Girton College having been opened at Cambridge this week, and the tutorial staff, with their girl students, are now in residence, and have commenced the collegiate year. The movement, which has culminated in the opening of Girton College, originated some four years ago, when a temporary college was opened in a hired house, where instruction has been given in the following subjects: Divinity, classics, German, mathematics, chemistry, physiology, geology, logic, political economy, mental philosophy, part singing, etc. The course, like that of the University, occupies about three years, half of each year being spent in the college in three terms. The college expenses, which include board, lodging, and instruction, are £35 per term each. The first mistress of the college is Miss Emily Davies, a member of the London-School Board, from which she is retiring in order to take the office of mistress of this college.

IRELAND.—The latest reports of the Commissioners of National Education tabulates 1,005,270 pupils, of whom 804,-

222 are Roman Catholics, and 201,048 (or almost exactly one-fifth) Protestant. Of the Roman Catholic children, about one-half (403,327) were in schools taught exclusively by Roman Catholic teachers, and with no Protestant attendance; 362,313 in schools taught exclusively by Romanists, with a percentage (27,312) of Protestant children as co-attendants. There were a few Roman Catholic children (27,312) in schools taught exclusively by Protestants.

CURRENT PUBLICATIONS.

HOWEVER excellent in some respects the Latin Grammars now in general use are, there are some points in which they invariably fail. They are insufficiently adapted to systematic study, because the rules are too abstract; and, because they do not treat subjects in their proper places, students are obliged to memorize much, which, at the time, is unintelligible, and which they forget before they have an opportunity to apply it. Besides this the authors are generally dependent upon the works of their predecessors, Ruddiman, Zumpt, and others, and, being only the compilers of compilers, often correct them when right, and follow them when wrong. In every grammar, including those generally quoted as authorities, many grammatical difficulties are slurred over, or are erroneously presented. We know of none which attempts to give the different grammatical forms at the disposition of the Latin language, to express the relations of cause, time, and manner. We look in vain for a chapter upon the peculiar forms for the relations of quantity, intensity, weight, and price. Ruddiman has omitted the theory of Tenses entirely, and what his successors give, is either erroneous or deficient.

To remedy all these defects in a single life-time is impossible, but a scholar who knows the language like a vernacular, and who has thoroughly studied all ante-classical, and classical authors, can remove most, if not all the objections against our Latin Grammars. GUSTAVUS FISCHER, LL.D., has fulfilled these two conditions, and in his "Manual of Latin Gram-

mar and Composition," the second part of which is just published, he has given us a work which will meet the demands for a thorough and intelligent study of Latin. His system is so arranged that the student does not take up a subject until he comes to it in natural course. For this purpose the whole range of Latin grammar is divided into two parts, an introductory or elementary section, in which the student is thoroughly drilled in the general principles of the language, and a special part, containing all the difficult details, which could not be understood without a previous survey of the whole language, and without an acquaintance with the usual Latin forms by which thought is conveyed. In the whole work there is no anticipation or draft on future explanations; every subject may be fully mastered as it comes up. The author endeavors to elucidate, first, the grammatical idea as such, then follows an enumeration of those grammatical forms which the language has at its disposition to express that idea, and finally the spirit of these forms is disclosed, by giving the student the key for their logical comprehension, and by comparing them with the corresponding English forms. In the second part, the same method is applied to the details of the language. From the first the pupil is thoroughly drilled in Latin composition, the author justly thinking that no part of the language can be mastered, or even appreciated, without schooling the mind of the student into transferring his own English thought into Latin thought. Hence to each chapter is added a large number of exercises, which are so arranged that rules previously learned are constantly coming up for application. Many of the sentences of the second part contain idioms different in both languages, so that regular paraphrases are given, to adapt the English sentence to the Latin way of thinking.

The rich material at the author's disposition has in a great measure emancipated him from the traditional grammatical apparatus handed down from Ruddiman's time, and has often given new views of the subject, and enabled him to settle some points which have been slighted before. A glance at the chapters on Gerundials, the Periphrastic conjugations, the Adverbial objects, (time, manner, coincident action, cause, quantity, price and weight), and especi-

ally the Tenses, Moods, and dependent sentences, will show the number of new, and hitherto unobserved, facts which have been brought to light. The possession of this material could not remain without influence upon the general grammatical principles, which either have been more firmly established, or presented in a new light. In closing our notice of this book we must remark, that it is not an easy method by which pupils can "learn Latin in twenty lessons;" hard work is the condition of success in its study. To those willing to work it offers itself as a reliable guide to the study of Latin.

M. CAMILLE FLAMMARION'S book, "The Atmosphere," which has been translated by James Glaisher, F. R. S., will be found interesting to the general reader, for although it treats its subjects scientifically, it avoids scientific nomenclature. Those familiar with the original will notice some omissions, although we think they improve, rather than injure, the work. The Respiration and Alimenation of Plants, for example, is so remotely connected with the subject that the omission of these chapters can hardly be called a loss. Then too, much of the "fine writing," which the French introduce into their scientific works, is ridiculous when translated, and this also is left out. Light, Temperature, Wind, Water, and Electricity, are discussed in a way to give the reader an outline of the causes which originate facts of every day occurrence in the atmosphere, and furnish an insight into the general principles which produce the phenomena we are familiar with. Some of these well authenticated facts, such as showers of fish, frogs, stones, and the like, seem like fiction. M. Flammarion has an interesting way of treating his subject which his translator has faithfully preserved.

KARL PETERMANN'S "Literaturgeschichtliches Lesebuch, 1 Band," is, as its name indicates, not only a reading-book, but a history of literature as well. It is divided into two parts, the ancient and modern, and these are subdivided into different periods, the last one extending from 1760 to 1820. Thus we have short histories of Klopstock, Herder, Lessing, Schiller, Goethe, and others, with selections from

their writings. Instead of giving isolated extracts from plays, the author explains the plot and introduces the quotations in their proper places, thus making a book which is understandable, and consequently enjoyable. This is the most scientific reading-book which has come to our notice. A student who uses it will not only gain proficiency in German, but will at the same time acquire a knowledge of the best authors, and of their writings.

"APPLETON'S EDUCATIONAL CATALOGUE" forms a book of eighty-four pages, and among its "Index of Authors" appear the names of some of the most renowned writers, such as Huxley, Sir Charles Lyell, Guizot, Roscoe, Youmans, Bayard Taylor, and others of equal note. It is a publication of which not only the publishers, but the friends of education as well, may justly be proud. Among the new things, we notice "Henslow's Botanical Charts," edited by Miss Youmans, which for accuracy and beauty, exceed anything in that line which we remember to have seen. The plan pursued is to first represent the plant in its natural size and color, and then to give a magnified section of the flower, showing the relation of the parts to each other. In addition to these, magnified views of the different floral organs are given. This is of great advantage, for often the plant characters are so minute, that they are difficult to find without first referring to an enlarged representation. Besides, these charts bring into a narrow compass a view of the structures of the leading types of the vegetable world, and show the relations existing between them. The English edition of Henslow's charts was too expensive; this edition, besides being cheaper, is better adapted to the study of American botany, since American specimens have been substituted for English species not found here.

G. P. PUTNAM'S SONS have added two books to their Elementary Science Series, one on "Organic Chemistry," and one on "Systematic and Economic Botany."

"A PERSON spells when he writes, but not when he speaks, and therefore written exercises in orthography must be of greater value to the student than oral exercises," says the Introduction to "Patterson's Speller and Analyzer," pub-

lished by Sheldon & Co. Upon this idea the work is founded. It consists of a spelling-book and exercise-book for writing words. After the dictation the pupil reviews his work, and checks misspelled words. These are rewritten in a separate column, and are convenient for future study or reference. The book is well adapted to its purpose; but there is one objection to dictation exercises for young children; they are apt to write so hurriedly as to injure their handwriting.

MISCELLANEA.

A LECTURER undertook to explain to a village audience the word "phenomenon." "Maybe you don't know what a phenomenon is. Well, I'll tell you. You have seen a cow, no doubt. Well, a cow is not a phenomenon. You have seen an apple tree. Well, an apple tree is not a phenomenon. But when you see the cow go up the tree tail foremost, and pick the fruit, it is a phenomenon."

DR. OSWALD KERR, of Zurich, states that the original home of the flax was the shores of the Mediterranean. It can be shown that the plant was cultivated in Egypt 5,000 years ago. Flax is found among the remains of the oldest pile-dwelling in the Swiss Lakes, where neither hemp nor wool has been discovered.

AT the recent session of the Niagara County Teachers' Institute, Mr. Brown related that a teacher in one of our Western States was prohibited from teaching the rotundity of the earth, or that it revolved on its axis—or, in other words, "turned over," as the trustee said. For proof that such teaching was a dangerous error, "William Larkin sat up all night and never saw any such thing."

IN Maine, a young teacher has been trying to interest her pupils in botany and mineralogy by explaining to them the nature of the plant or stone gathered by them during Saturday rambles in the woods. Recently one of the committee

formally forbade her to do this any more, because "it filled the children's heads with nonsense, and prevented their studying." Oh, wise committee!

A RECENT author calls pie and doughnuts "unassimilable abominations."

PROF. STRONG, of the Drew Theological Seminary, Madison, N. J., is organizing an expedition to Egypt and the Holy Land. It will start about Christmas, and will embrace in its *personnel*, engineers, artists, scientists, and a select party of tourists, all under charge of Prof. Strong, assisted by Prof. T. Norman and Mr. George May Powell.

A TELEGRAM to the *Tribune* says: "Mrs. A. P. Taylor has a plurality of 352 in this city—Cairo, Ill.—and is probably elected School Superintendent, though the county vote, which is strong for Mrs. Brown, will make the race a close one. The male candidates for School Superintendent received but a small vote." Ichabod!

PUBLISHERS' DEPARTMENT.

ROBERT CLARKE & Co., Cincinnati, Ohio, have in press a reprint of "Essays on Educational Reform," by R. H. Quick, Trinity College, Cambridge. 1 vol., 12mo. \$2.00. Extract from a letter of John Hancock, Esq., Supt of Public Schools, Cincinnati: "I know of no educational work in English of equal value. No teacher, who has an ambition to emancipate himself from a servile adherence to the traditional methods of teaching, can read the book without profit. Beginning with Roger Ascham, it gives us an account of the lives and schemes of most of the great thinkers and workers in the educational field, down to Herbert Spencer, with the addition of a valuable appendix of thoughts and suggestions on teaching." Extract from a letter of Miss D. A. Lathrop, Principal of Normal School, Cincinnati: "I have for the past two years made it the basis of my class-work in history of education. I take pleasure in recommending it as one of the invaluable books for every teacher's library." As only a limited edition will be printed, teachers are requested to send their names in at once. Circulars, with testimonials from some of the leading educators, will be sent on application;

also, a catalogue of valuable works on education, science of teaching, etc.

DOES IT PAY?—One of the Agents of *The Christian at Work*, T. De Witt Talmage's paper, recently obtained 380 subscriptions in about eighty hours absolute work. This was great work to be sure, but the agent had a fine paper and superb chromos to back him. There is room for more agents of the same sort. Samples and terms free. Office 102 Chambers street, New York. See advertisement.

A BEAUTIFUL pictorial library—chromo—latest style dress pattern for ladies—engravings—a premium of thirty articles—sent FREE and any magazine at less than cost. It will pay you to read the advertisement. "Do not wait—a great pictorial library, etc., for \$1.25," in this number.

The Living Age, advertised in another place, will be clubbed with the AMERICAN EDUCATIONAL MONTHLY for \$6.25 per an. The subscription price of the *Living Age* alone, for one year, postage paid, is \$3.00.







